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ABSTRACT

This publication, one in the series on Aerospace Education III, deals with the background of the defense system of the United States. Description of different wars in which this country was involved includes the development of new military organizations and different weapons. One chapter is devoted in its entirity to the organizational structure of the present Department of Defense. The last chapter reviews the missions and capabilities of the U.S. Army, Navy and Marine forces and describes some of the more advanced equipment employed by each of these forces. The book is designed to be used in the Air Force ROTC program. (PS)

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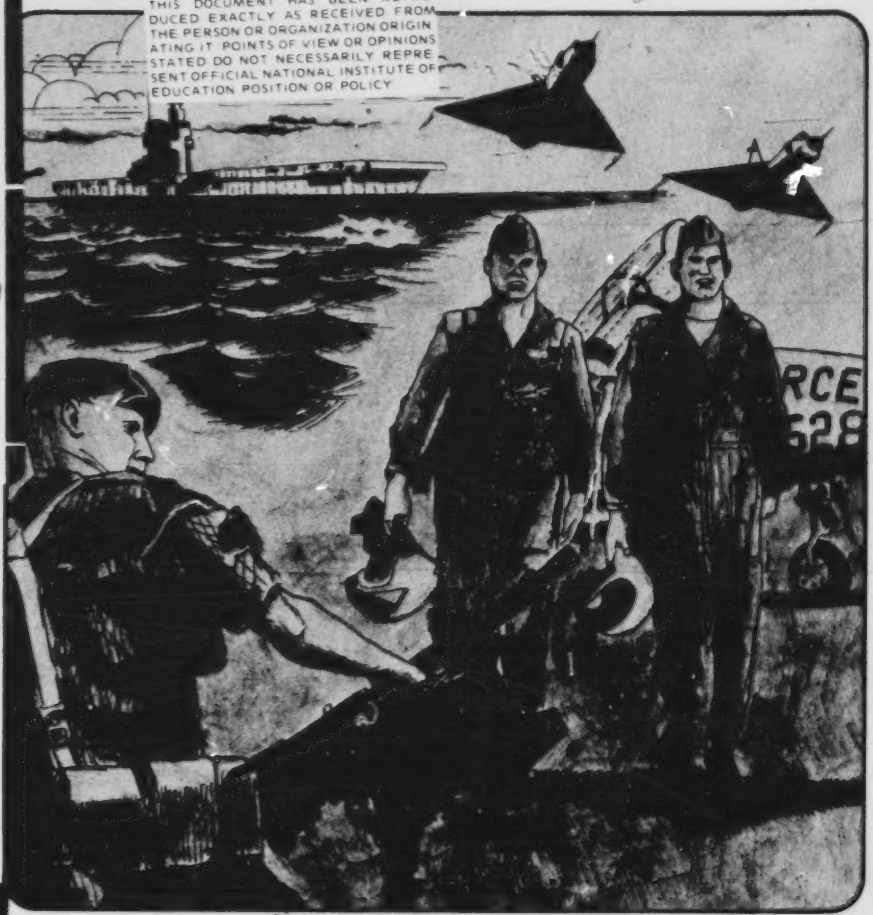

AEROSPACE EDUCATION III

Defense of the United States

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We gratefully acknowledge the contribution of Maj Rodney V. Cox, Jr., AE Course Director, AFJROTC, to the development of this text.

Preface

THE RISE of the United States from a group of little colonies huddled along the east coast of a raw, new continent, to a position of world leadership has covered a relatively short span of time. Yet in this brief period, almost continuous technological and scientific progress—sometimes extremely slow and sometimes amazingly rapid—have reshaped almost every area of life in the United States. Especially influenced by these technological and scientific developments have been US concepts of international relations and national defense.

In actual measurement, of course, the world is no smaller today than it ever was; and the oceans, mountains, and deserts that nations once regarded as protective barriers are still there. But innovations in transportation, communications, and weaponry have made every part of the world accessible—and vulnerable—to every other part. Distance is no longer reckoned in terms of days or weeks but in minutes or hours.

Today, the security of the United States, possibly its very survival as a world power, depends on maintaining a system of national defense so well-coordinated, so flexible, and so mobile that it can meet and defeat enemy aggression anywhere on any terms.

This text is mostly about wars as they have affected the military and foreign policies of the United States from its birth as a nation until the present. More important, however, than a history of US military involvements is the story of the technological and scientific achievements that have played such an important part in this history. In each war, science and technology have produced innovations to meet that war's particular needs; but many of those war-inspired innovations

have inevitably remained and been improved to enrich mankind in time of peace.

Grateful acknowledgment is made to the National Rifle Association of America for the illustrations appearing on pages 11 and 12 of this text.

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Chapter 1

From the Founding Through the Civil War

THIS CHAPTER follows the history of US military involvements from the Revolutionary War through the Civil War and explains the factors that affected military policy and the composition of the Armed Forces during this period. The chapter also discusses the growth of technology during this era and the influence of technological innovations on the conduct of war. When you have studied this chapter, you should be able to do the following: (1) define isolationism, the Monroe Doctrine, and Manifest Destiny and explain their significance in relation to US military policy; (2) compare the enlistment practices and organization of the Continental Army with those of the Union and Confederate forces in the Civil War; (3) name and describe three technological innovations that were developed in the period between the Revolutionary War and the Mexican War; (4) list three innovations that directly affected the conduct of the Civil War.

FROM THE TIME the United States won its independence from England in the American Revolution until well into the twentieth century, basic US military policy was influenced primarily by two factors: a distrust of large standing armies and a firm belief in **isolationism**—a policy of noninvolvement in the affairs of other nations.

The Americans inherited their dislike of standing armies from their British forebears. This attitude had been brought over by the early colonists and was passed on from generation to generation. For centuries, England's traditional land defense force had been a militia organization of free men who provided their own weapons and supplies. They were not very well trained,

disciplined, or efficient and were incapable of prolonged campaigning; but with certain modifications, the militia system set the pattern for the colonial forces. The colonial local authorities, however, did furnish guns and ammunition to those militiamen who could not afford them, and in long campaigns, the colonial governments assumed responsibility for supplies.

Isolationism, the second major influence on US policy, was not illogical in the early years of the United States. The United States was separated from Europe, not only politically but also geographically. The political maneuverings of the European nations in their struggles for power were of little concern to the colonists who were busy organizing their own new nation. Furthermore, between the continent of North America and the nations of Europe lay several thousand miles of Atlantic Ocean, and to the west, lay the even broader Pacific—barriers that took weeks, not hours, to cross. George Washington expressed the attitude of his countrymen in his Farewell Address when he said, "Tis our true policy to steer clear of permanent alliances with any portion of the foreign world." This viewpoint was to color US military policy for many years to come.

There were, of course, a number of other influences on military policy. Among them were the principle contained in the Monroe Doctrine and the concept of manifest destiny which began to flourish as the country moved west. These concepts are explained later in the chapter. Moreover, technological developments also had their influence. Although the Industrial Revolution was bringing about new developments only slowly in the first half of the nineteenth century, by the time of the Civil War, technological advances were sufficiently important to influence the conduct and, to some degree, the outcome of the war. This chapter, then, traces the evolution of certain basic US policies and the impact of these policies and of technological advances on the Armed Forces of the United States from the founding of the nation through the Civil War.

COLONIAL FORCES

Considered as a military organization, the colonial **militia** was remarkably democratic. The general officers and the regimental

colonels were appointed by the royal governors or the colonial assemblies. The company officers were elected by the men themselves. These practices normally kept the officers' commissions in the hands of men of the upper classes. Militiamen had to appear for training at their county or town seats for a certain number of days each year. They were expected to keep in readiness for call in case of Indian attacks or other emergencies.

A general call for the entire militia force of a colony seldom occurred. Instead, the organization served principally as a training and mobilization base. Local commanders could draw on this large base for individuals or units for active operations. Selection of militiamen was usually by the volunteer method, although militiamen were occasionally drafted. As a rule, the men chosen were called upon to serve for a stipulated period of time. This period usually was for the estimated length of the campaign.

The efficiency of the militiamen varied from colony to colony and even from locality to locality within the same colony. Despite the rather relaxed atmosphere found in the militia units and the small amount of really formal training the militiamen received, these men could be counted on to make an efficient fighting force when engaged in dispelling Indian threats to their own communities. As the Indians were pushed westward, however, the people along the Atlantic seaboard tended to relax. Military training and preparation were not considered as important as they had been when the Indian threat was more immediate. This relaxation of tension was reflected in militia training in a number of ways. For example, training days previously held as often as one day a week were rescheduled for once a month or even once a year. In some instances, training days became little more than festive social gatherings.

Such, then, was the character of the colonial forces in being at the outbreak of the American Revolution.

THE AMERICAN REVOLUTION, 1775–1783

The American military policies of the Revolution had their roots in principles and beliefs that long predated the war. In addition to the distrust of standing armies, the colonists were also opposed to conscription and to the religious and political

persecution which they observed and sometimes experienced in their homeland.

Revolutionary War Military Policy

Unhappily, the colonists found little relief from military service in the New World. Not only were they obliged to defend themselves against Indian attack, they were caught in the European tug-of-war for territory and trade in America and, as British subjects, they were forced to fight against foreign troops. Faced with these dangers, the colonists relied on the traditional militia organization for mutual protection. It was this organization and experience that formed the basis of American military policy in the Revolution.

At the start, the colonists were not anxious for outright war with England. They asked only for political rights equal to those of English subjects in the mother country (Fig. 1). In fact, for 15 months after the first shots were fired at Lexington and Concord,

Figure 1. Crispus Attucks, who was black, was the first man to give his life in the fight for independence. He was killed by British troops during the Boston Massacre in 1770.

Figure 2. The Signers of the Declaration of Independence.

some colonial leaders still hoped for a peaceful settlement. Finally, with all hope of agreement with England gone, the colonists proclaimed their independence in the historic document of 4 July 1776 which gave unity and purpose to American aims by declaring "that these united colonies are, and of a right ought to be, free and independent states . . . and that, as free independent states, they have full power to levy war, conclude peace, contract alliances, establish commerce, and to do all other acts and things which independent states may of right do." Thus began the history of the United States as a nation, and with it began a fight for the right of men to exist in the freedom "to which the laws of nature and nature's God entitled them (Fig. 2).

Revolutionary Military Forces

When the hostilities between the colonies and England developed, the "revolutionary" colonial governments set about establishing control over their respective militia organizations and shaping them into effective military forces. In Massachusetts, for example, roughly one-third of the militia, comprising the younger

and more active members, was organized into **minuteman** companies. These companies were able to mobilize rapidly. The remaining troops were designated as reserves.

Both minuteman and reserve companies fought at Lexington and Concord. Soon, thereafter, the New England colonies banded together to create an "army" consisting of a wide mixture of militia and volunteers under the loose control of several different commanders. The enlistment periods of these troops expired at (or before) the end of the year 1775. This was the force which fought the British at Bunker Hill.

In June 1775, at the request of the Massachusetts Provincial Assembly, the Continental Congress took over the existing New England army and appointed George Washington as commander in chief. At the same time, it authorized the recruitment of 10 companies of riflemen from Maryland, Pennsylvania, and Virginia for a period of 1 year. As commander of the new army, Washington had the responsibility for welding a disorganized group of independent contingents into an effective fighting force. In his own words, the so-called army was a "mixed multitude of people . . . under very little discipline, order or government." Regiments varied considerably in the number of men assigned to them. Supply and pay systems differed. More than a dozen kinds of muskets were in use and almost all of these were the property of individual soldiers. Discipline was lax. Men went to and from their homes with little regard for military procedures. Many of the officers were untrained, inexperienced, and inefficient. Shelters for the men consisted of tents and rude huts constructed of boards, brush, sailcloth, and turf. Washington found he had a most difficult task on his hands.

Plans for converting these units at Boston into a Continental Army called for enlisting them to the end of the year 1776 and paying, supplying, and administering them by the Continental Congress. Reenlistments were slow, and Washington was forced to rely continually on short-term militiamen to supplement his regular force. The shortage of supplies was just as serious as the manpower problem.

In the absence of an executive branch of government, the Continental Congress, and later the Congress under the Articles of Confederation, appointed boards and committees to perform various executive functions. Then, in June 1776, the Continental Congress

created the Board of War and Ordnance to handle affairs relating to the army. The Board was abolished in 1781 and replaced by a Secretary of War.

A number of factors constantly threatened the stability and strength of the army. In the first place, colonial governors could, and on occasion did, withdraw entire militia units. Added to this unsettling practice were disease and desertions. Moreover, short enlistments continued to be a problem as soldiers left the service at the expiration of their enlistment periods. The shifts in personnel strength brought frequent revisions or reorganizations of the military establishment. A major attempt to achieve stable strength came in late 1776, at which time, Congress authorized 110 battalions of troops. This force was to be raised by the States in proportion to their populations and recruited indirectly into the Continental service. States would control the appointment of officers through the rank of colonel. A Continental bounty of $20, a new suit of clothes, and 100 acres of land, were authorized for each private and noncommissioned officer who enlisted.

Congress also sought to solve the problem of short-term enlistments by requiring that the men were to be enlisted to serve for the period of the war. Unfortunately, this important provision was later weakened by a provision which permitted an alternative term of three years.

The induction program for volunteers was disappointing. There was little increase in the enlistment rate and that was largely offset by large-scale terminations of prior enlistments. It was necessary under these conditions to continue the practice of supplementing the Continental forces with militia troops.

The year 1780 was a particularly dark one for the American cause. The value of Continental currency had dropped so low that Congress could no longer pay soldiers or purchase supplies. Responsibility for the latter function was consequently shifted to the respective states, with indifferent results. Recruiting became virtually impossible. Repeatedly Congress and the states increased their bounties for enlistment. Little benefit resulted except to create a large group of **bounty jumpers,** that is, individuals who enlisted in one state, only to desert and enlist elsewhere. Conscription of militia personnel for one year's service also failed to produce the desired numbers. Fortunately, certain reforms were adopted which helped to provide one final burst of energy. A

wealthy Philadelphia merchant, **Robert Morris,** accepted the position of Superintendent of Finance. Working in close connection with the Quartermaster General, he introduced a policy of supplying the Army by private contracts and pledged his personal credit as a guarantee of final payment. It was at this time that the cumbersome Board of War and Ordnance was abolished in favor of the single, full-time Secretary of War.

Considering its small size and lack of equipment, the victory of the Continental Army over the British was a remarkable feat, for at no time during the war did General Washington have sufficient troops or the means of properly supplying them. The ineffective methods used to raise and provision its forces all but cost the new nation its long-sought liberty (Fig. 3).

Technology in the Early Years

Judged by present-day standards of "instant everything," technology, in the Revolutionary period and the years immediately following, was moving at a snail's pace. Transportation, communi-

Figure 3. General Washington crossing the Delaware.

cations, and weaponry were about the same as they had been a hundred years earlier—in the case of transportation and communications, many hundreds of years earlier.

Land transportation was limited to the horse and the horse-drawn vehicle. Vehicle models, of course had come quite a way since the days of the Roman chariot, and there were now elaborately decorated enclosed coaches for those who could afford them. But no matter how fancy the vehicle, it moved no faster than the horses that pulled it.

The ocean was still being crossed by slow-moving sailing ships. The use of steam to power an engine had been discovered, but the application of the steam engine to a boat or a vehicle was in the experimental stage only and would remain so until well into the nineteenth century.

Communications moved only as quickly as the means of transportation used to carry them—again the speed of man on horseback, a horse-drawn vehicle, or a sailing vessel. Two exceptions to this slow process were the messenger relay system and signalling. The messenger relay was operated through a chain of stations set up between two points and covering a greater distance than one man and one horse could travel nonstop. Each station had a rider and fresh horse waiting to carry the message on, which eliminated delays for resting. Relay messengers are known to have been in use as early as the days of Hannibal's widespread campaigns. Signalling devices also had been used in many parts of the world for centuries. The usual methods were drums, bonfires, smoke, or significant landmarks. During the Revolution, the colonists frequently used a combination of a barrel, a basket, and a flag which they positioned in certain ways atop a post to convey the desired message. At sea, messages were signaled from one vessel to another by flags, lights, and sometimes, by the movement of the sails. Codes for naval communication had been developed as early as the sixteenth century, and by the time of the Revolution, a plan of flag signaling had been perfected that was much like the modern semaphore.

The primary weapon of both the British and American forces was the **musket,** a smooth-bore gun that was essentially unchanged in design from the type used a century before. However, the muskets used during the Revolution, and for some time afterward, were a great improvement over their fifteenth and

sixteenth century forerunners, particularly in the firing mechanism. In the early models, the charge was ingnited with a match (a piece of rope soaked in wine or a solution of saltpeter), hence the musket was called a **matchlock.** The first improvement on the matchlock was the **wheel lock** which operated on the principle of a cigarette lighter. In this mechanism the wheel was powered by a spring which, when released, caused the wheel to revolve against a piece of iron pyrite and send off sparks into the powder. The final improvement in the firing mechanism of muskets was the **flintlock.** This mechanism consisted of a flint positioned opposite a piece of steel (Fig. 4). When the spring controlling the flint was released, the flint arced forward striking the steel and causing sparks to drop into the **flashpan.** With a little bit of luck, the priming powder in the pan then ignited the powder in the bore to discharge the musket. Unfortunately, this did not always happen and the man behind the gun was left with nothing but a "flash in the pan." These improved muskets, however, were much lighter than the original models (about 12 pounds as compared to 20) and could be loaded and fired much more rapidly. Nevertheless, the musket was a clumsy weapon, short ranged and far from accurate. The most expert marksman could not hope to hit a man-sized target at a range of more than 80 to 100 yards.

The rifle, however, was a different story, and although there were only a few companies of riflemen in the Revolutionary forces, they made themselves felt. The American rifle, popularly known as the **Kentucky rifle** but manufactured chiefly in Pennsylvania, had a long, rifled barrel and was exceedingly accurate at a range almost three times greater than that of a musket (Fig. 5). There were, however, two drawbacks to this otherwise very effective weapon—it was not equipped to carry a bayonet and reloading was a dangerously slow process. The rifle, therefore, was no substitute for the musket in an infantry charge where widespread, "rapid" fire was the key factor in checking the opposing forces before they could get close enough to engage in hand-to-hand combat. Until its loading process was finally speeded up, which did not come about until the middle of the nineteenth century, the rifle served best as an ambush weapon in guerrilla type actions, a form of combat that the colonists, many of whom were experienced hunters and Indian fighters, used to great advantage against the British.

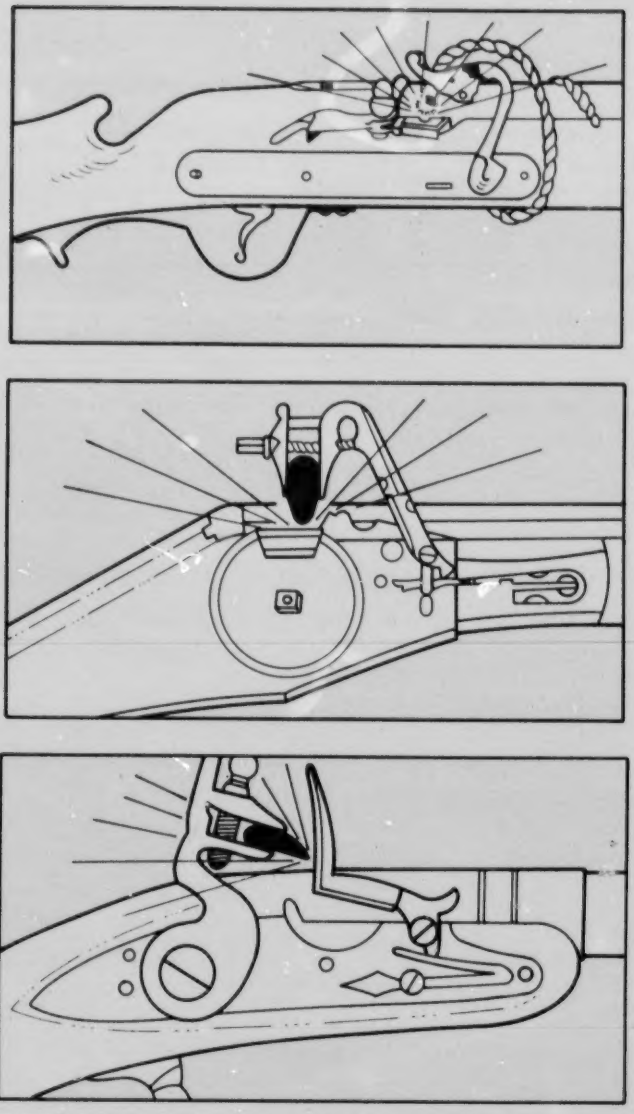

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Figure 4. Musket firing mechanisms: the matchlock, the wheel lock, and the flintlock.

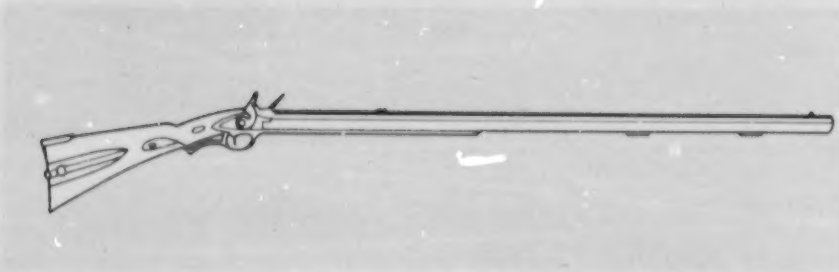

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Figure 5. Kentucky rifle of the Revolutionary War era.

Although the pace was slow, technological innovations were appearing on many fronts in the relatively peaceful years between the Revolution and the War of 1812. For example, after years of experiments and failures, **Robert Fulton** produced the first commercially successful steamboat, the **Clermont** (Fig. 6). His boat was launched on the Hudson River and made a record run from New York to Albany and back. In England, the first steps were being taken in the development of railroads, but perhaps the most significant step forward into the machine age at that time was taken by **Eli Whitney.**

Whitney is probably best remembered for having invented the cotton gin, an ingenious device for removing the seeds from cotton fibers and doing it far more quickly and cleanly than it could be done by hand. Unfortunately, however, although the cotton gin brought tremendous prosperity to the South, it brought none to Mr. Whitney who was unable to realize any profits from it. Casting about for some other source of income, Whitney discovered that the US Government was in need of a large supply of muskets because of renewed trouble with England. He persuaded the Government to give him the musket contract by offering a completely new concept of precision tooling that would greatly speed up the manufacturing process. Until Whitney's unique machines took over the job, muskets had been entirely handmade by gunsmiths who were artists as well as craftsmen. Each part was painstakingly hand tooled to fit the particular musket for which

it was intended, but the work was time consuming and the parts so produced were not uniform from gun to gun. Whitney, however, conceived and built a series of machines, each of which was designed to turn out one particular part, in quantity and uniformly tooled. These standardized parts could then be used interchangeably so that the completion of any one musket was not held up for want of a part. Although Whitney applied his revolutionary ideas to the manufacture of weapons, the techniques he developed marked the beginning of mass production in all kinds of goods.

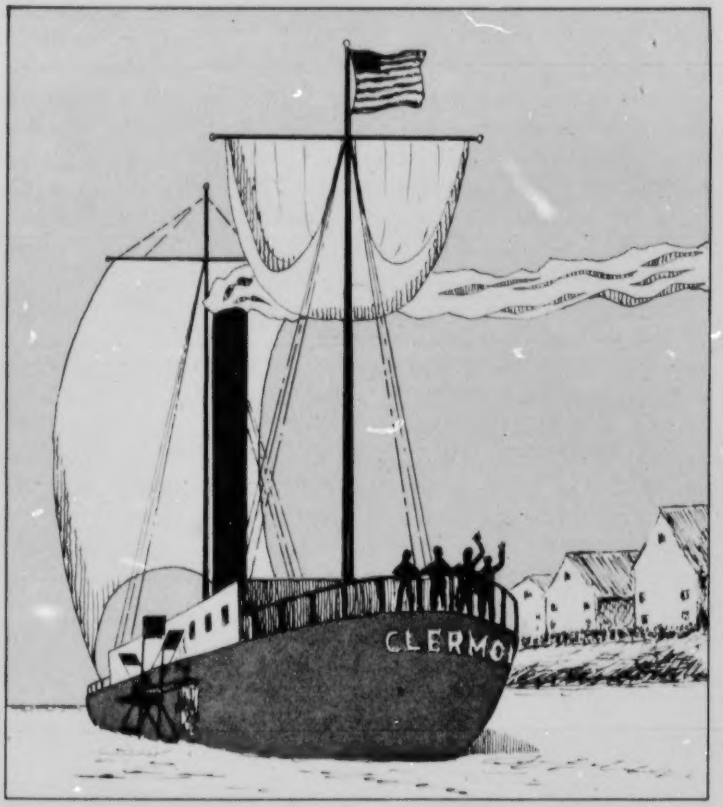

Figure 6. Robert Fulton's steamboat the Clermont.

BETWEEN WARS

Following the Revolution, the American people still felt that a strong military force could threaten individual liberty. As a result, no permanent army was maintained after the close of the Revolution. However, the United States was in trouble with Britain, France, and the Barbary States of North Africa almost before the ink was dry on the document ending the Revolution. From 1802 until 1815, the small US Navy fought off and on against the North African pirates who had long raided Mediterranean commerce. England did not vacate US frontier areas or cease inciting Indian hostilities as agreed in provisions of the peace of Paris of 1783. Both Britain and France, involved in the Napoleonic Wars, began to prey upon American ships engaged in neutral trade and in other ways created friction with the US Government. Washington, recognizing the need for a period of peace in order to build up the strength of the new nation, proclaimed neutrality in 1793. Neutrality, however, was difficult to achieve. A lesson as yet unlearned by many was evident at this early date—a national objective can seldom be attained unless a nation has the strength to attain it.

The interval between the close of the American Revolution and the War of 1812 also witnessed certain basic changes in the general administration of war-waging agencies. The most significant were the provisions of the new Constitution, adopted in 1789, which gave Congress the power to declare war, raise armies, and provide for a navy. The Constitution also made the President **Commander in Chief** of the Armed Forces and assigned to him all executive powers. Thus the Secretary of War was now responsible directly to the President instead of Congress. At first, the War Department had jurisdiction over naval affairs as well as the Army since there was as yet no Navy. In 1798, however, Congress provided for a Navy, reestablished the Marine Corps, and created the Department of the Navy. The Military Academy at West Point was established in 1802.

During this period, the United States needed a military establishment primarily to cope with hostile Indians who continued to attack its frontier settlements. The standing force was seldom sufficient to prevent Indian attacks, and the militia was often needed to aid in repelling them. The weakness of the Regular forces

had other results as well. It invited insults and aggression from the European powers. The United States was far removed from Europe, however, and the danger of invasion was slight.

THE WAR OF 1812

As a result of certain insults to US diplomatic representatives and actions of the French fleet against American commerce, US warships and commissioned privateers began to attack French ships in 1798. Within a short time, however, the United States became more provoked over British naval actions than over French activities. British interference with trade, British confiscation of American cargoes, and the forceful impressment of American seamen into the Royal British Navy aroused the people of the United States. They also resented the fact that the British continued to arm Indians who raided the western settlements. The US Government had responded to these actions by placing an embargo on British and French goods, but without noticeable success. Finally, American resentments led President James Madison to recommend war in 1812.

Military Forces in the War of 1812

Shortly after the declaration of war against Britain in 1812, Congress voted to quadruple the size of the active military forces and to use the militia. A bounty of $16, in addition to 3 months' pay and 160 acres of land upon satisfactory completion of service, were offered to encourage enlistment in the Regular Army. In spite of these inducements, however, recruiting was very slow and the forces assembled were, for the most part, not too efficient, the weakest link being the militia. Varying greatly in strength and general worth, with undisciplined troops and poorly trained officers, the militia demonstrated once again all of its old weaknesses. Now, however, there was an additional difficulty. Some of the states, principally in New England, opposed the war and objected to any use of their troops. On occasion, certain governors refused to honor the President's requisitions. They took the stand that the call for militia was authorized only for such specific purposes as repelling invasion, suppressing insurrection,

and executing the laws of the United States. On several occasions, State militia refused to cross the Canadian border.

At the outbreak of war, the US Navy consisted of only a few ships, brigs, frigates, and gunboats. There were no battleships. The Department of the Navy did not even have drydocks. Except for the naval establishment at Washington, the navy yards were in a state of neglect. A few months earlier Congress had refused appropriations for the construction of larger vessels, although it made provision for a fleet of privateers.

In forces in being and in available resources, the British were far superior to the United States in 1812. This also was true of the British fleet, which was the most powerful in the world at that time. Because of their involvement in the war with France, however, the British committed only a small percentage of their land and sea forces to the war with the United States.

In spite of such handicaps as the poor leadership, inadequate training, and the insufficient strength of the Regular Army, plus difficulties with the state militias, American forces finally prevailed against the enemy. **Andrew Jackson** successfully defended New Orleans (Fig. 7); the small professional Navy, supplemented by privateers, wreaked havoc upon British commerce plying western waters; and Perry's victory on Lake Erie added immensely to Navy prestige.

Military Policy After the War of 1812

The second war with Britain proved to be an undertaking for which the United States was ill prepared. The fighting was inconclusive, but British alarm over threatening political conditions in Europe finally permitted the United States to conclude a relatively mild treaty of peace. The treaty provisions settled few of the grievances which had caused the war, however.

The War of 1812, with its many military failures, impressed upon Americans the necessity for a peacetime defense establishment composed of professionals. Both the Army and the Navy received greater appropriations than had heretofore been the policy of peacetime Congresses. Increased appropriations, however, were not sufficient to meet military needs on the extending frontiers and those resulting from the nation's expanding international role.

Figure 7. Andrew Jackson at the Battle of New Orleans.

Three years after the War of 1812 Congress set the maximum strength of the Regular Army at 6,000. During the next 25 years the strength of the Regular Army fluctuated somewhat, depending largely upon the nature and extent of recurring troubles with the Indians.

This period also witnessed a significant development in American foreign policy—the Monroe Doctrine of 1823.

THE MONROE DOCTRINE AND MANIFEST DESTINY

The **Monroe Doctrine** was announced by President James Monroe in his message to Congress in December 1823. In broad terms the doctrine declared that the United States would consider as dangerous to its peace and safety any attempt of European powers to extend their political system to any portion of the Western Hemisphere.

Two separate causes prompted President Monroe to include this policy statement in his message. In the first place, in 1821

the Russian Czar had issued a decree by which foreign vessels were forbidden to approach within 100 miles of the territories claimed by Russia along the northwest coast of North America. The territory included present-day Alaska. The claimed territory was reserved exclusively to Russian subjects for commerce, whaling, fishing, and other industrial pursuits. This decree was contested by the Secretary of State, John Quincy Adams. In the course of his negotiations with the Russians, Secretary Adams followed the policy that European states could claim no right to establish colonies in the New World. President Monroe adopted this principle and elaborated on it in his message, declaring "the American continents, by the free and independent condition which they have assumed and maintain, are henceforth not to be considered as subject for further colonization by any European power."

The Monroe Doctrine was further prompted by the possibility that continental European powers might attempt to restore to Spain the South American colonies that had rebelled against its rule. Actually, by 1823, most of these colonies had won their independence and were so recognized by the United States. The possibility did exist, however, that some effort would be made to regain them, and in the face of this possibility, President Monroe declared that the attempt of any European power to oppress or control the former colonies would be viewed by the United States as an unfriendly act.

Because of their profitable trade with South America, the British elected to forget old enemies and back the United States in upholding the doctrine, and with their help it became an effective policy for the defense of this Hemisphere. Unaided, the small US Navy and standing Army could not have deterred the colonial ambitions of the continental powers, but the combination of the United States and the British Empire was too formidable to be challenged. The Monroe Doctrine, supported by the British Navy, prevented a succession of wars that could have wrecked the economic and political growth of the United States.

Beginning in the 1830s the spirit of **manifest destiny** also played an increasing role in United States political growth. Those who believed in manifest destiny considered it inevitable that American democracy and ideals would engulf the whole of America.

Stimulated by this belief and excited by the prospect of adventure and new land, many Americans began pushing farther and farther west, across the Mississippi and eventually into the Mexican territory of Texas.

Texas has had a long and colorful history. Among other bits of interesting information about the state is the fact that Texas is the only State to have been an independent nation before joining the Union. For about 300 years, the area now included in the state of Texas was controlled by Spain. In 1821, Mexico, of which Texas was a part, won its independence from Spain. For the next 15 years (1821-1836) Texas was, in effect, a province of Mexico. During this period, emigrants from the United States, attracted by the promise of generous land grants, moved into the area. In 1821, **Stephen F. Austin** led 300 families into Texas and began colonizing land granted by Mexico. Other groups followed, and by 1836, there were probably four times more settlers from the United States than Mexicans in the territory. The Mexican Government became concerned over the increasing number of Anglo-American colonists but was too busy with affairs within Mexico to exercise firm control over the region. The settlers, on the other hand, because of their different language and culture, were prone to virtually ignore the Mexican Government. Finally Mexico attempted to regain its control over the colonists through such actions as abolishing slavery, levying taxes, and establishing military garrisons in the area. As a last resort, the Mexican Government declared martial law and tried to disarm the Texans. The Texans were naturally resentful of these acts and were soon engaged in open warfare with the Mexican forces. In 1836, Texas declared its independence and confirmed this declaration a month later by defeating the Mexicans at the Battle of San Jacinto.

Texas remained independent for nine years, but sentiment was building, both in the new republic and in the United States, for Texas to become part of the United States. This finally occurred in 1845, when Texas was admitted to the Union as the 28th state. The annexation of Texas, however, did not end the troubles between the United States and its hostile neighbor to the south. Mexico refused to recognize the new status of Texas and continued to be a stumbling block to US ambitions for further westward expansion. A clash between the two countries was inevitable.

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THE MEXICAN WAR, 1846–1848

With Texas now in the Union, the United States next attempted to buy from Mexico the territories of California and New Mexico but with no success. Mexico not only turned down the offer but refused to recognize the US claim that the border between Texas and Mexico was the Rio Grande River, insisting instead that Texas ended at the Nueces River farther to the northeast.

On orders from the President, Gen Zachary Taylor moved his forces into the disputed territory between the two rivers and established a fort on the bank of the Rio Grande directly across from the Mexican forces on the other side. Here they sat facing each other for two months. This "cold war" situation ended abruptly, however, when the Mexicans crossed the river and wiped out a US patrol. The war had begun in earnest.

The United States won this war, even though its forces were outnumbered by the Mexicans. The victory can be attributed mainly to two factors: (1) for the first time in its history, the United States had a group of professional military leaders, many of whom had been schooled at the Military Academy; and (2) these leaders were supported by professionally trained soldiers and volunteers. Although it took two years of hard-fought battles, the US forces pushed their way successfully to Mexico City, the capital, and occupied it. The Mexican Government had no choice but to surrender (Fig. 8).

By the terms of the peace treaty, Mexico recognized the Rio Grande as the Texas boundary and ceded California and New Mexico to the United States. The territory of New Mexico included what is now New Mexico, Arizona, Utah, Nevada, and parts of Wyoming and Colorado. The western boundary of the United States extended, at last, to the Pacific Ocean.

Military Forces in the Mexican War

On the eve of the conflict with Mexico, the strength of the US Army was just over 5,000. By the outbreak of the war, however, a system of general recruiting for the Army at large, inaugurated as early as 1822, had proved far more successful than regimental recruiting. After having been accepted at specified de-

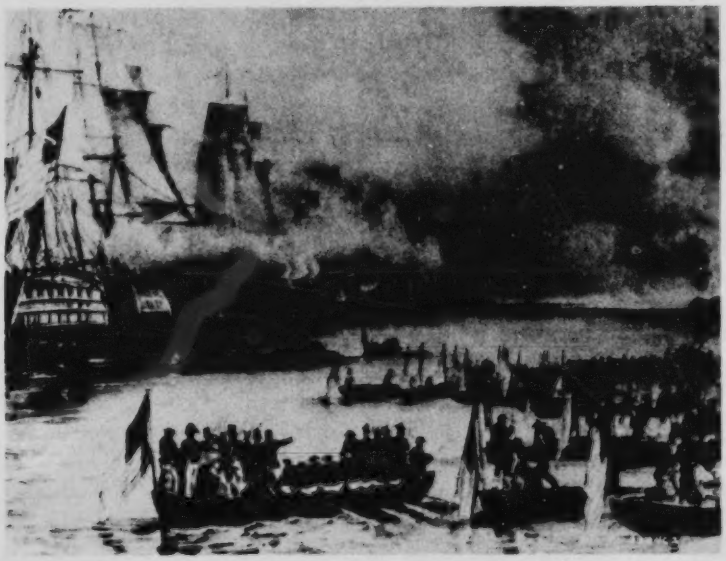

Figure 8. General Scott landing his forces at Vera Cruz. This was the first major amphibious landing in the history of the US Army.

pots, the new recruits were given some training and then, on orders of the War Department, were assigned to regiments.

Considerable progress had been made in maintaining a corps of professionally trained officers. As of 1845, approximately 500 graduates of the Military Academy were in active military service. Congress had also provided the Army with a top-ranking officer, known as the Major General Commanding the Army.

Following the declaration of war, Congress authorized additional recruiting for the Regular Army, with the enlistees to be accepted for a term of 5 years. It authorized the President to issue a call for volunteers for a term of 1 year or the duration of the war; increased the term of enlistment of the militia (in case they should be called) from 3 to 6 months; and gave the Chief Executive the power to charter or purchase such vessels as might be suitable for public service. Volunteers were expected to provide their own uniforms, horses, and equipment and were promised eventual reimbursement.

During the Mexican War, the United States made relatively

little use of the militia because of its claim to immunity from service outside the United States. Troops were better trained and disciplined than the American soldiers had been in previous wars, and this was reflected in the efficiency with which this war was fought. Nevertheless, the specter of short-term enlistments for the volunteer troops rose again to plague the military commanders. Despite the fact that the greatest strength of the Mexican Army was probably never above 36,000 men, US generals often found themselves commanding outnumbered forces. So serious was the situation that at one time near the end of the war Gen Winfield Scott lost by enlistment termination some 4,000 men—nearly one-half of his entire army. As a result, he had to halt his advance on Mexico City and wait several weeks for replacements! Finally an American Army of less than 6,000 combat troops marched into the very heart of Mexico and captured the enemy capital, defeating a Mexican army of four times its number.

US forces were outnumbered and overextended in the heart of a hostile nation, but daring and capable generalship and the inability of the Mexicans to assume offensive action enabled General Scott to succeed in the assault upon Mexico City. Failure would have meant disaster and a long war. General Scott attributed the victory to professional leadership:

> I give it as my fixed opinion that but for our graduated cadets the war between the United States and Mexico might, and probably would, have lasted some four or five years, with, in its first half, more defeats than victories falling to our share, whereas in less than two campaigns we conquered a great country and achieved a peace without the loss of a single battle or skirmish.

Technology after the Mexican War

At the time of the US involvement in the war with Mexico, there had been no significant changes in weaponry. Muskets and cannons were the same as those used in the Revolutionary War and as the loading problem with the rifle had not yet been corrected, its use was still limited. In transportation and communications, however, technology had brought some startling changes that were to have tremendous impact in future years, not only on military policy but on the whole economy of the United States.

Steam power was transforming both water and land transportation. Steamboats were in common use for river and coastline

travel and a start had been made building steamships that could cross the Atlantic. The first crossing of note was the **Savannah,** a sailing ship with an auxiliary engine and side paddle wheels which were used for part of the trip. The crossing from Savannah to Liverpool, made in 1819 was completed in 29½ days. In 1833, a Canadian built steamship crossed the ocean in 19 days and in 1838 a third steamship, the *Great Western,* went from New York to England in only 15 days. The day of the sailing vessel was about over.

The day of the horse as the only means of moving a wagon or carriage was fading also, giving way to steam-powered railroad trains. The original railroads were wooden tracks (later made of iron) on which horse-drawn wagons were used for hauling minerals, but various experiments were being made to develop a steam engine to haul the wagons. The first engine capable of hauling freight was made in England in 1801. Then, in 1829, also in England, George Stephenson invented and built a locomotive called the *Rocket,* which outdistanced any other engines of that time. The United States purchased its first two locomotives from England, but as they proved to be too heavy for American tracks, all subsequent locomotives used in the United States were manufactured locally. By the time of the Mexican War, there were numerous short-line railroads operating in the United States, although the first transcontinental line, the Union Pacific, was not completed until 1869.

Another important breakthrough, this time in communications, came with the invention of the telegraph by **Samuel Morse.** Now messages could be transmitted almost instantly by means of a single overhead wire, using the earth as the other conductor to complete the circuit. Morse also developed the code which bears his name, using combinations of dots and dashes representing the letters of the alphabet.

Also, in the early years of the nineteenth century, gun designers, particularly in France and England, were devoting their time and talents to correcting the loading difficulty of the rifle. The grooves in a rifled barrel were cut in a spiral pattern to give the bullet a spinning motion when fired and, thus, greater accuracy. In order to achieve this motion, however, the bullet had to fit tightly against the grooves. The standard ammunition for the early rifles was a round ball, such as was used in muskets; but

while this type of ball would drop smoothly into a musket barrel, it had to be forced down a rifle barrel with time-consuming blows of a ramrod. To the people working on the problem, it became apparent that the trouble lay, not in the size of the bullet, but in its shape, and experiments were begun in making elongated bullets which, when fired, would expand against the grooves. Finally, Minié, a Frenchman, perfected an elongated bullet with a cup-shaped cavity in its base. When the rifle was fired, the discharge forced the cup into the bullet causing the bullet to expand against the rifling. The **Minié ball,** as it came to be called, slid easily into the barrel and could be quickly rammed home. At last, the rifle had become a practical weapon for all branches of the fighting forces; but since Minié did not produce this innovation until 1849, it was not used in combat until the Civil War.

None of these innovations were sufficiently developed at the time of the Mexican War to materially affect US military policy, but by the time of the Civil War, just a few years later, they would play an important role.

THE CIVIL WAR, 1861–1865

The dust of the Mexican War had barely settled before the future of the United States was threatened with a far graver danger than foreign aggression. A widening breach between the northern and southern States, caused by disputes over economic, social and political differences, finally led to secession by the Southern Confederacy and the outbreak of the Civil War.

Civil War Military Policy

Lincoln was grief-stricken when faced with the necessity of going to war after Confederate forces fired on Fort Sumter. He had hoped for a reconciliation but was nevertheless determined to preserve the Union at all costs. Military action, formerly an emergency measure to be applied against aggression from without, now became a necessity for the preservation of the Republic against dissension from within the nation's own boundaries.

Civil War Military Forces

A reduction in the size of the Army to a peacetime status had begun as soon as the Mexican War came to an end. The volunteers were discharged and the new regiments of the Regular Army (the Mounted Rifles excepted) were mustered out. At the outbreak of the Civil War in 1861, about one-third of all Regular Army officers resigned to join the Confederate forces. Enlisted men were not permitted to resign and only a few deserted to the South.

Following the attack on Fort Sumter, President Lincoln issued a call to the States for volunteer militiamen to serve for 3 months, the maximum time possible under the law (the Militia Act of 1795). More volunteered than had been called for and undoubtedly even more could have been obtained. As in the past, however, militia units represented varying degrees of combat efficiency. Some were well trained and equipped, while others existed in name only. Also there arose the usual problem of short-term enlistments. One militia unit, its term of service expired, actually marched to the rear to the sound of gunfire at the First Battle of Bull Run (Manassas) in July 1861!

When it appeared, in the spring of 1861, that a major war was inevitable, President Lincoln, on his own initiative (though later upheld by Congress) authorized an increase in the size of the Regular Army, and established the Volunteers. At no time during the war was the Regular Army brought up to full strength because prospective recruits preferred the larger bonuses, the shorter enlistment periods, the less rigid discipline, and the more companionable atmosphere of the Volunteers.

Recruits poured in to Volunteer units too fast for the Government to house, equip, and train them adequately. In many instances, the troops of these green Volunteer regiments chose their own company officers, who in turn were supposed to select all field grade officers except regimental officers. These were appointed by the State governors. In other cases, the governors appointed all the officers. As a result of these different systems, some unqualified officers were appointed. A reform soon required all officers to prove their fitness before examining boards. The President commissioned all Volunteer officers above the rank of colonel.

Some turned out to be political appointees—not all of whom were militarily competent—and others were Regular Army men.

Soon after the First Battle of Bull Run, Congress authorized the President to enlist additional Volunteers for 6 months to 3 years or the duration of the war. The response was so great that the prewar Army staff and administrative machinery had to be overhauled. As the war progressed, however, interest in volunteering began to drop. Response to a call in July 1862 was slow despite the promise of a $100 bonus, but talk of a draft stimulated enlistments later.

Early in 1863, Congress passed the **Enrollment Act,** the first national conscription legislation in the history of the nation. It stipulated that all men between the ages of 20 and 45, with certain exceptions, were liable for military service. Those who were enrolled were subject to call for 2 years and, once drafted, would serve for 3 years or the duration of the war. Unfortunately, the law was undemocratic in that it permitted any draftee who could afford it to hire a substitute or to gain exemption by paying $300. The act proved to be very unpopular, as the draft riots in New York and Boston demonstrated, and it brought only a small number of men into the military service. The Government eventually abandoned that plan for raising an army, but used it meanwhile to stimulate volunteering.

At the outbreak of the war, the United States Navy had only a few thousand men and at least a fifth of its officers resigned to join the Confederacy. In 1861, simultaneous with authorizing an increase in the size of the Regular Army, President Lincoln raised the authorized strength of the Navy. Recruiting for the Navy was slower than for the land forces because bonuses and other inducements were not offered. In 1864, personnel had to be transferred from the Army to the Navy. The total Navy personnel by the end of the war was about 58,000 and the number of vessels in the Navy totaled about 625 of which about 65 were ironclads.

On seceding from the Union, the Confederate States took possession of such Federal property within their borders as arsenals, forts, and navy yards. When Lincoln took office, the only strategic places within the confederacy still effectively controlled by the North were Fort Pickens at Pensacola, Florida, and Fort Sumter in Charleston Harbor. Meanwhile the Confederate Congress had cre-

ated war and navy departments, comparable to those in the United States Government.

Early in March 1861, the Confederate Congress authorized the raising of volunteers. Recruiting, however, was very slow until after President Lincoln's call for Union volunteer militiamen, which the South regarded as a virtual declaration of war. The Confederate Congress then recognized a state of war and authorized President **Jefferson Davis** to accept as many volunteers as he deemed necessary. In addition, individual States called out their militias, which were mustered into the service of the Confederacy. By the end of 1861, several hundred thousand men had offered their services, though the lack of arms and equipment made it impossible for many of them to be accepted.

Like their counterparts in the North, the Southern young men quickly lost their first enthusiasm, forcing the South to resort to conscription before the North. The bulk of men in the Confederate service had enlisted for 1-year terms which began to expire in the spring of 1862. In order to preserve veteran armies as well as to secure new recruits, the Confederate Congress, in April 1862, passed a conscription act providing that men betwen 18 and 35 were liable for military duty. A few months later, the age was raised to 45, and in 1864, these limits were extended to between 17 and 50. Such persons as State officials, ministers, teachers, editors, conscientious objectors, railway employees, millers, and one white man of military age on each plantation where there were a specified number of Negro slaves were exempt from military service. For a time a vulnerable draftee could hire a substitute. As in the North, conscription in the Confederacy brought relatively few troops into the military service but did stimulate volunteering.

Civil War Military Technology

The influence of machines and their products was so important during the American Civil War that it is frequently called the first modern war. In this war, force was exerted beyond the battle areas to destroy the enemy's capacity to support troops and to undermine the will of the civilian population to continue the fight. Such force is illustrated by the Union use, early in the war, of a naval blockade of the South. This was an effective technique of

economic warfare directed against the entire population. Sheridan's devastation of crops in the fertile Shenandoah Valley in Virginia, and Sherman's march through Georgia were further examples of the same tactics.

The Civil War was the first major war in which railroads were used extensively for the transportation of men and supplies, though troops still marched on foot in most of the campaigns. Use of the railroads tended to speed up strategic movements and permitted the supply of an army from a point many hundreds of miles away from the battle area. There was also the newly invented telegraph, which, while not yet nationwide, was sufficiently established to contribute to the mobility and control of the striking forces. Messages and orders could now be transmitted almost instantly between any two points connected by the lines.

Other important technological developments came into use for the first time during the Civil War. Among these were ironclad battleships, which dramatically proved that wooden ships were obsolete; metallic cartridges for use in breech-loading repeating rifles, the **Gatling machine gun** (Fig. 9); improved revolvers; hand grenades; land mines; electrically exploded torpedoes; steamboats which made every navigable stream an important artery of supply; balloons for observation (Fig. 10); and even the production of wire in sufficient quantities to make wire entanglements practical. Most of these developments came too late, were too imperfect, or were available in too few numbers to be decisive; but the railroad and increased firepower were two innovations which had marked effects upon the strategy and tactics of the Civil War.

The network of rail lines, more dense in the North than in the South, linked cities and strategic areas but it also tended to tie an advancing force to its tracks when the force depended on the railroad for transport and supplies. The rail lines were also a mixed blessing for the towns that bordered on them. When the railroads were attacked, the towns which depended on them for supplies suffered.

Increased firepower during the Civil War resulted from improved shoulder guns and cannon with rifled barrels which became available in quantity for military use. These, combined with new type ammunition—the streamlined ammunition for rifles, invented by Minié, and a similar cylindrical-shaped projectile used in cannon—enabled projectiles to travel faster, straighter, and far-

Figure 9. The Gatling machine gun. On the left is an original model used in the Civil War. On the right is a modern version adapted for use on aircraft.

ther (Fig. 11). The increased range of weapons made losses almost prohibitive in a frontal attack by either infantry or cavalry. This was particularly true when the enemy was lodged behind breastworks or in trenches. Both sides eventually learned this in the Civil War. Long-range artillery broke up the massed enemy cavalry and infantry. In particular, improved cannister and grapeshot and the exploding shell created havoc at greater distances. The improved rifles made entrenched defenses necessary to keep casualty rates down. Railroads and better highways now permitted transporting the great weights of cannon. Cavalry were still useful for reconnaissance and, especially when equipped with breech-loading carbines, very dangerous in forays behind the normal battlelines. **Gen Philip Sheridan** of the Union forces and **Gen J. E. B. Stuart** of the Confederacy, were noted for their spectacular and successful cavalry raids.

On the sea, the North began with a big advantage over the South. At the outset of the war it had a merchant marine second only to that of Great Britain, with a great majority of its

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ships sailing out of New England home ports. The US Navy possessed 42 warships. Of these, 4 were late-design steam frigates and 15 were screw-driven cruiser sloops.

Secretary of the Navy Gideon Wells aggressively attempted to enforce an announced blockade of the South, which had a coastline 3,500 miles long. Such a blockade seemed necessary because the South's economy was based upon the production and sale of cotton; the Confederacy had to export cotton to Europe in exchange for the materiel with which to carry on the war.

The naval blockade employed by the North during the war severely curtailed the South's foreign trade and doomed its economy and war effort to collapse. In spite of some noteworthy attempts by the Confederacy to break it, the blockade was successful. Its success rested in no small measure on the industrial capacity of the North to build the ships which made it possible.

The Confederate Navy began with almost no warships, guns, ammunition, and materiel, but it had experienced naval officers who had formerly served with the US Navy. Resourceful men in this group sought to make up for lack of conventional fighting

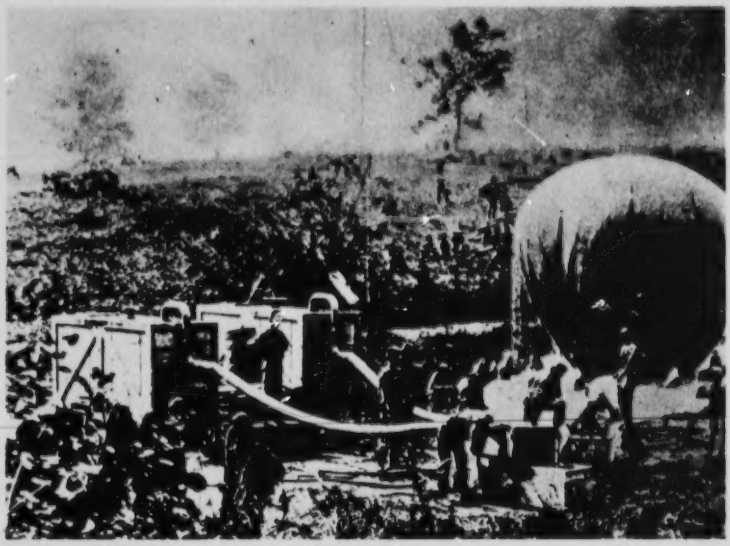

Figure 10. Observation balloon in the Civil War.

(First photograph of the US Army in combat.)

Figure 11. Artillery deployed at the Battle of Fredericksburg, Virginia, 1863.

equipment and to break the strangling Northern blockade by unconventional innovations in shipbuilding. Two of these efforts deserving special mention were ironclads and submarines. Each effort, though based on ideas by no means new, nonetheless made a clear contribution to naval warfare.

A scuttled Union ship, the **Merrimac,** was raised by the Confederates, stripped down, and a rooflike casemate built over its deck. The sloping sides were covered with 4-inch iron plates and provided with eight broadside guns and four fore-and-aft pivot guns. The ship was rechristened the *Virginia.*

The vessel attacked the Union blockade fleet off Newport News, Virginia, on 8 March 1863. Its quick success in sinking two wooden ships and damaging another caused consternation in the Union Navy. The next morning, in attempting to continue the kill, this ironclad met the new Union ironclad, the **Monitor,** which

had just steamed from New York. The *Monitor*, with low **freeboard** (the height of the first deck from the water) and a single revolving gun turret now engaged the *Virginia* in a celebrated standoff duel—the first battle between maneuverable, power-driven, armored ships. The implications made clear by this battle drastically changed the navies of the world (Fig. 12).

The Confederate Navy can be credited with an innovation that was to become very significant in future naval warfare. The Confederates, after five attempts, each of which cost the lives of the crew, succeeded in constructing a workable submarine, the **David.** The propeller had to be turned by a hand crank and there were two water tanks which could be filled or emptied through valves. Iron castings bolted to the keel could be detached for surfacing. The submarine was not a totally new idea—experiments in designing such a craft had been tried as early as the seventeenth century, and a tiny submarine, the *Turtle*, was used in the Revolutionary War in an effort to plant an explosive in the hull of a British warship. (The attempt failed.) These earlier subs were small, one-man structures about the size of a rowboat, but the **David** was the first multicrew submarine and the first effective one. Primitive as it was, the *David* accomplished its mission of torpedoing and sinking a Union vessel, and even though the sub itself was sunk by the explosion of the torpedoes, its brief per-

Figure 12. The **Merrimac** and the **Monitor**. The first naval conflict between ironclad vessels.

formance had a profound effect on the thinking of naval planners.

The Civil War not only preserved the Union, it also had a strong international impact. Military power built up during the Civil War and in being at the end of the conflict gave the United States a new importance in the eyes of European nations.

WORDS, PHRASES AND NAMES TO REMEMBER

Austin, Stephen F.
bounty jumpers
Clermont
Commander in Chief
David
Davis, Jefferson
Enrollment Act
flashpan
flintlock
freeboard
Fulton, Robert
Gatling machine gun
isolationism
Jackson, Andrew
Kentucky rifle
Manifest Destiny
Matchlock
Merrimac
militia
Minié ball
Minuteman
Monitor
Monroe Doctrine
Morris, Robert
Morse, Samuel
musket
Savannah
Sheridan, Philip
Stuart, J.E.B.
wheel lock
Whitney, Eli

REVIEW QUESTIONS

1. What factors influenced US military policy in the United States throughout its earlier history? What was the effect of these influences?

2. How were forces raised for the Continental Army? What were the problems involved?

3. **What was the state of technology in weapons, transportation, and communications at the time of the Revolution? Explain Eli Whitney's innovation in the manufacture of muskets and tell its significance.**

4. **What changes in military policy occured as the result of the War of 1812?**

5. **What was the Monroe Doctrine and how did it affect the future of the United States? What was the meaning of Manifest Destiny?**

6. **What new territories did the United States gain as a result of the Mexican War?**

7. **What technological innovations had been developed by the time of the Civil War?**

8. **What innovations had the greatest impact in both land and sea warfare in the Civil War?**

9. **What were the differences in enlistment practices and organization between the Union and Confederate forces?**

THINGS TO DO

1. Select a major battle fought by the United States in any one of the wars discussed in this chapter and report on the forces, tactics, and military equipment employed.

2. Visit a nearby museum and look at the exhibits of technological innovations developed in the eighteenth and nineteenth centuries. These would include weaponry, transportation, communications or industrial machinery.

3. Select one of the outstanding military leaders (North or South) of the Civil War and give a class report on his role in the war.

SUGGESTIONS FOR FURTHER READING

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Chapter 2

From 1865 Through World War II

THIS CHAPTER continues the story of US military involvements as they occurred in the Spanish-American War, World War I, and World War II and discusses the impact of these wars on US military policy, organization of forces, and growth as a world power. Parallel with this discussion, the chapter describes the rapid technological advances in weaponry, transportation, and communications and explains their effect on US policy and strategy. When you have studied this chapter, you should be able to do the following: (1) outline the changes in US military and foreign policy following the Civil War and during the first half of the twentieth century; (2) describe the improvements made in the organization and training of US military forces which developed during the period; (3) explain what was accomplished by the National Defense Act of 1916, the Army Reorganization Act of 1920, and the Selective Service Act; (4) list technological advances made during the period covered by this chapter and explain how they affected US military policy and tactics, particularly in the Spanish-American War and World Wars I and II.

WHILE THE UNITED STATES did not emerge from the Civil War as a great world power, the war did demonstrate the increased military capabilities of this nation and gave it a new importance in the eyes of the world. In fact, awareness of US military strength was undoubtedly a factor in the decision of Napoleon III to abandon his plans for French domination of Mexico. Following its usual practice of rapid demobilization, however, the United States did not maintain its armed strength for long.

POST-CIVIL WAR MILITARY FORCES

Within a few months following the end of the war, most of the Union forces were demobilized. Army forces were depleted to the point where they were not always able to control and contain hostile Indian tribes. Despite its loss of personnel, however, the Army did take steps to improve the quality of its professional forces.

In the interval between 1865 and 1898, both the basic and professional education of the small complement of Army personnel was improved. Included in these improvements was a requirement that recruits be able to read and write and that general schools be maintained for enlisted men in all permanent camps and garrisons. The Army began to require annual efficiency reports for all officers and examinations for promotions. Also, the War Department fostered measures that would strengthen the units of the State militia, or National Guard as they were being called at this time, and bring about some measure of coordination between them and the Regular Army.

The postwar reduction of the Army was accompanied by a similar cutback in naval strength. Not only did training of naval personnel come to a halt, so did shipbuilding. The Navy suffered further from the sale or drydocking of many warships. Many Government officials were hesitant to adopt new technological advances. For example, President Grant's Secretary of the Navy forbade the use of steam power except in harbors or calm waters.

During the 1870s, the Navy was ranked twelfth in seapower, behind even China and Denmark. In fact, the US Navy did not possess a single armored ship until the 1880s, when several new cruisers of limited range were launched. These ships carried 8-inch guns and were equipped with armor and turrets.

Failure to create an adequate naval arm made it difficult for the United States to defend itself abroad. An illustration of this occurred in 1889 when the German Kaiser, supported by a strong navy, attempted to assume control of the Samoan Islands. Fortunately for the United States, just as the German and US naval units in the harbor of Apia were about to clash, a hurricane and tidal wave destroyed some of the ships and prevented a showdown battle. The Samoan episode served a useful purpose, how-

ever, Weakness at a critical moment called the attention of US military leaders to the fact that a first-class Navy was necessary to protect US interests. Soon after this, the United States began to watch more carefully the events taking place across the Atlantic and the Pacific and to proceed with a building and training program which would enable it to carry out naval theories in actual practice. These preparations were later justified by naval successes in the Spanish-American War.

THE SPANISH-AMERICAN WAR, 1898

When the Cuban insurrection against Spain broke out in 1895, there was widespread indignation in the United States over the harsh measures employed by the Spanish Government to suppress the rebellion. Furthermore, the United States was well aware of the strategic importance of Cuba to its future in the Caribbean area. In the interest of hemispheric security, as well as for humanitarian reasons, it was a natural step for the United States to side with the Cubans in their effort to gain independence, a step which inevitably led to armed conflict with Spain.

Spanish-American War Military Policy

US sympathy for Cuban revolutionaries, coupled with the unexplained sinking of the US battleship **Maine** during a call at Havana Harbor in February 1898, led to demands for war (Fig. 13). So strong were the demands that on 19 April 1898 Congress passed a resolution recognizing the independence of Cuba and authorizing military action it its support. Spain was defeated in less than one year.

The United States emerged from its victory over Spain possessing the Territory of Puerto Rico and having temporary custody of Cuba and the Philippine Islands. Alaska had already been purchased from Russia some years before; and in 1898, the Hawaiian Republic became a US possession, with settlers from the mainland playing a part not unlike the one played by earlier US settlers in Texas. Its interests and influence now being so greatly expanded, the United States was forced to cast off, temporarily at least, its traditional shell of isolationism. The nation

Figure 13. The sinking of the Maine.

was now one of the leading international powers, with areas of potential friction, both to the east and to the west, and with an acute need for an enlarged Regular Army and a two-ocean Navy to defend its interests.

On the eve of the war with Spain, troops of the US Regular Army, although relatively few in number, were well trained. Nevertheless, with few units larger than a regiment, and without a well-organized high command, the Army was ill-prepared for full-scale war.

Following the declaration of war, Congress authorized an increase in the size of the Regular Army and authorized the President to call for volunteers. In the general enthusiasm for the war, almost 1,000,000 men volunteered. As in the past, however, many of these volunteers preferred to enlist in their local **National Guard** units.

The use of the National Guard posed a number of problems. Almost all of the Guard units were infantry, many of which were poorly trained, equipped, and disciplined. The organization of the National Guard varied so much from state to state that there seemed to be as many armies as there were states. Furthermore,

the units jealously guarded their individual rights and opposed any suggestion of Regular Army control. An added complication was the question of the legality of sending the National Guard to serve out of the country.

A few regiments were raised as US Volunteers, separated from the Regular Army or the National Guard. These units suffered from poor oraganization and administration. Many of the officers lacked training; equipment and supplies were inadequate; sanitation and medical services were dangerously poor; much of the food was unfit to eat; and weapons and ammunition were obsolete. The Regular Army fared better than the Volunteers, but here, too, equipment, particularly clothing, was in short supply.

On the other hand, due to the construction and modernization program of the previous 10 years, the US Navy was far better prepared for war with Spain than the Army. Unlike the Army, the Navy had no serious recruiting or training problems. Its only real handicap was the panic-stricken cities along the Atlantic coast which demanded protection from attack by the Spanish fleet. Although their fears were groundless—the Spanish were solely concerned with reaching some safe port in the West Indies—the outcry was so great that the Navy was forced to split its strength and station a squadron of vessels along the east coast to calm the frightened citizenry.

Developments after the Spanish-American War

The Spanish-American War was a short one, but it taught the United States a number of valuable lessons on preparedness and organization. The Navy, thanks to several years of buildup and training, was not caught unprepared, but the Army was not only small, it had no mobilization plan, and had no experience in joint operations with the Navy. Having no plan for mobilization, the War Department found itself floundering in a morass of problems trying to train, equip, and supply a wartime army. There were severe shortages, not only in weapons, but in such basic necessities as food, clothing, sanitation, and medical care. Lack of proper medical care and decent sanitation were the worst problems. More men were incapacitated or died from malaria, typhoid, and yellow fever than from enemy bullets. Grim as it

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was for the victims, however, this situation produced one great benefit (too late, of course, for the troops in this war) the Medical Corps launched a project to determine the causes of yellow fever and stamp it out. This developed into a permanent program of research and study to protect the health of US troops from the ravages of disease and climate.

At the close of the Spanish-American War, the United States did not demobilize its Armed Forces as completely as it had done in other postwar periods. The nation was now fast emerging as a world power, with major commitments in various parts of the globe. For several years, a large part of the Regular Army served outside the continental United States in such places as Alaska, Cuba, Hawaii, the Philippines, and the Chinese mainland.

In the years preceding World War I, the Regular Army never reached the 100,000-man strength authorized by Congress in 1901. Nevertheless, a small addition was made to the Army organization which was to become very large and very important in future military policy and strategy. This seemingly insignificant addition was the establishment of the **Aeronautical Division of the Army Signal Corps** in 1907. It consisted of one officer and one enlisted man. Army aviation was finally officially recognized in July 1914 when Congress created the Aviation Section of the Signal Corps and authorized a strength of 60 officers and 260 enlisted men.

During this time some basic changes were made in the organization and administration of the nation's defense forces. Probably the most significant was the elimination of dual control over the Army inherent in the arrangement whereby the Commanding General exercised discipline and control over the troops in the field while the Secretary of War, operating through bureau chiefs, handled administrative and fiscal matters. Upon the urgent recommendations of Secretary of War Elihu Root, Congress, in 1903, replaced the Commanding General with a **Chief of Staff,** who was the responsible adviser and executive agent of the President through his Secretary of War. To assist the Chief of Staff, a General Staff Corps was organized, composed of selected officers whose full-time duties consisted of formulating general policies and preparing military plans and programs. Numerous reforms affecting the

noncombat services also were accomplished. Army schools which existed prior to 1898 were reorganized and new ones created.

Some effort was made to improve National Guard training and to bring its organization and equipment more in line with the Regular Army. **The Militia Act of 1903** provided the Guard with funds, prescribed regular drill sessions, and set up annual training periods. Joint maneuvers involving the Regular Army and National Guard units were held from time to time. Subsequent changes between 1908 and 1914 included giving the President authority to prescribe the length of time the Guard might be called to Federal service and, with the advice and consent of the Senate, to appoint all officers of the Guard while it was in Federal service.

Even before the Spanish-American War, the United States had a fairly respectable naval force. Following that war the "Big Navy" policy was ably championed by President Theodore Roosevelt, who succeeded in adding 51 vessels to the Navy between 1902 and 1906. By 1906 the United States held third place (after Great Britain and France) among the principal naval powers. Regular increases in the Navy provided for 12 first-class battleships from 1906 to 1914, after which the tempo was increased (Fig. 14). There was a corresponding increase in Navy and Marine Corps personnel.

Military Technology

The period after the Spanish-American War brought revolutionary new technological changes in US weapons and military equipment. Many new discoveries of science were put to work to make the Navy more effective. Submarine development was emphasized, and by 1911, the Navy had acquired 28 submarines. The **destroyer** was developed as a fast scout, as an escort to screen larger men-of-war, and as an offensive fighter in its own right. The destroyer's primary weapon was the steam torpedo which was capable of sinking a cruiser. Naval gunnery was vastly improved by such devices as the telescopic sight, range finders, and centralized fire control. Better communications resulted from the use of electronic communications equipment. No longer would the whereabouts of ships at sea be unknown

Figure 14. A US battleship, circa 1906.

to commands on land as was the case during the whole of the celebrated voyage of the USS *Oregon* when it raced from the west coast of North America completely around South America to join the Atlantic fleet at the outbreak of hostilities with Spain in 1898.

The Panama Canal, completion of which was spurred by the voyage of the *Oregon*, was a major technological achievement. This made it unnecessary for the US Navy to maintain both an Atlantic and Pacific Fleet for many years.

In 1903, a great American invention, destined to upset established procedures of war, was not given immediate military recognition in this country. The airplane's first military development took place in Europe. Not until 1909 was the first US military airplane accepted from the Wright brothers (Fig. 15). World naval aviation had its beginning when the French aviator Bleriot flew across the English Channel in July 1909. In 1910, the US Navy conducted tests to determine the practicability of having an airplane land on or take off from the deck of a ship, but these experiments were limited, due to lack of sufficient funds.

By 1916, at a time when European nations were already employing this new invention in combat, the United States had only a few planes in commission, and these were barely airworthy. The first US attempt to make practical military use of the airplane was in the Mexican border expedition of 1916. All eight craft committed were lost to mishap or mechanical failure.

Technological advances in the Navy were paralleled in the Army, particularly in small arms, artillery, and ammunition. The improved bolt-action, magazine-type **Springfield rifle** was adopted in 1903 at about the same time that the 45-caliber automatic pistol was developed for close fighting. Also machine guns were greatly improved. In the artillery, the old muzzle-loading cannons were replaced by breechloaders; smokeless powder was introduced; and artillery pieces were equipped with the **hydropneumatic recoil system,** which prevented them from rolling back and having to be repositioned after each blast. These improvements permitted more rapid firing, and the accuracy and range of all classes of artillery were markedly increased as well. Most of

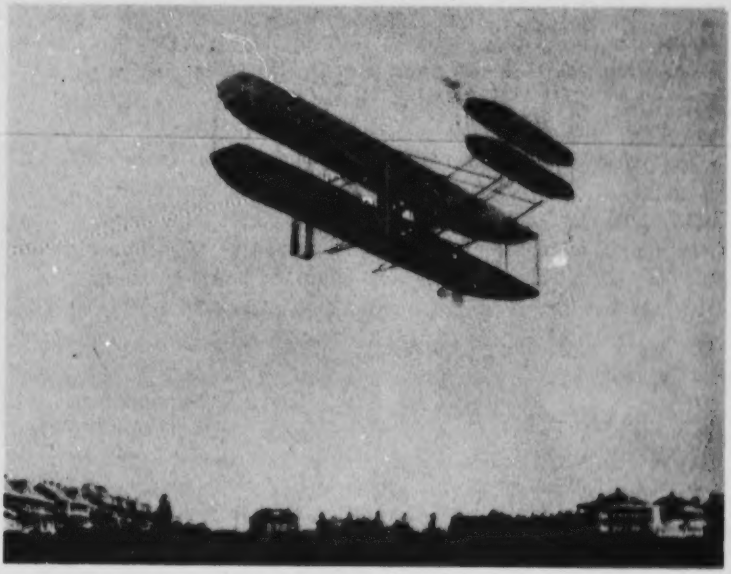

Figure 15. Wright flyer.

these changes were to have a tremendous impact during World War I.

WORLD WAR I, 1914–1918

Before 1914, European nations were divided by a number of issues. Among these differences were rivalries concerning colonies and resentments over past wars. As nations sought to protect themselves against possible future enemies, they entered into defensive alliances. These alliances grew until most of Europe was divided into two camps, each fearing that the other was bent upon destroying it.

World War I Military Policy

In 1914, the European scene exploded when the Archduke Francis Ferdinand of Austria was assassinated by Serbian patriots. As a result of interlocking alliances, Europe was plunged into World War I. One side, known as the Allies, was made up of the British Commonwealth, France, Italy, Russia, Japan, (the United States after April 1917), and a number of smaller countries*. The other side, called the Central Powers, was composed of Germany, Austria-Hungary, Turkey, and Bulgaria.

During the early years of this war, the United States attempted to maintain its traditional position of isolation from European affairs. As the leading neutral industrial power, the United States experienced unprecedented prosperity from the tremendous expansion of commerce with belligerents on both sides. Shortly, however, the economic warfare measures employed by both the Allies and the Central Powers began to violate US rights as a neutral on the high seas.

The superior British Navy drove German merchantmen from the seas, blockaded German ports, and even seized American cargoes destined for neutral ports when it was suspected that they were intended for transshipment to the Central Powers. The US Government vigorously protested this violation of the rights of neutrals.

*Rumania, Serbia, Belgium, Greece, Portugal, Montenegro

Germany, in retaliation for the English blockade, waged vigorous submarine warfare upon ships bound for Allied ports. Finally, in desperation, the German high command went so far as to sink passenger ships. Several American lives were lost when the British passenger liner **Lusitania** was torpedoed. Tempers ran high in the United States and formal protests were made against this violation of international law. For a while, the Germans heeded the American protests, but by early 1917, they had resumed their unrestricted submarine attacks, and on 6 April 1917, the United States entered the war on the side of the Allies. Anglo-American traditions and sympathies, plus German international policies, had shaped the decision. "Make the World Safe for Democracy" became the rallying battle cry.

World War I Military Forces

The National Defense Act of 1916 reasserted the principle that all able-bodied men between the age of 18 and 45 were subject to military service. This paved the way for selective service, which was adopted the next year. Reserve Officers' training units were established at various colleges and universities and provision was made for an Officers' Reserve Corps and an Enlisted Reserve Corps. Finally, the 1916 law authorized an increase in Regular Army and National Guard strength. These 1916 changes came just in time, for within less than a year the United States entered the European conflict.

Legislation enacted in May 1917 envisioned three sources of military manpower: (1) the Regular Army; (2) the National Guard; and (3) a National Army, raised by selective service. The selective service enactment provided that all men between the ages of 21 and 30 (later changed to 18 and 45) must register. Conscripts, or draftees, were chosen by lot. The law strictly prohibited the hiring of substitutes or the purchasing of exemptions.

The old practice of commissioning men directly from civilian life was discontinued except for certain specialists, such as doctors or individuals trained in supply or technical services. All other officers were obtained from qualified enlisted men in the Regular Army, from the Reserve Officers' Training Corps, from Student

Army Training Corps in colleges and universities, and from officer training camps and schools which were open to qualified volunteers and draftees.

World War I also caused a large-scale increase in naval vessels and personnel. In 1916, Congress provided for the construction, over a 3-year period, of 10 first-class battleships, 6 cruisers, 50 destroyers, and 67 submarines. Meanwhile Congress had created the Office of Chief of Naval Operations, comparable to the Army General Staff; had established the Naval National Reserve; and had authorized the inauguration of the naval aviation program.

World War I Military Technology

By 1914, science and the greatly improved techniques of mass production were having multiple effects on the military forces of nations.

LAND FORCES.—Trench warfare, the predominant form of ground combat in World War I, resulted directly from the state of military technology at that time (Fig. 16). Breechloading repeating rifles and machine guns could produce such heavy fire that infantry forces were literally pinned to the ground and cavalry operations were impossible. Even after many hours of "softening" preparation by the artillery, the ground gained by such methods was usually limited to a few miles—sometimes the gain was measured in yards. The result was stalemate.

While no satisfactory solution to the stalemate appeared during this war, the rudiments of open warfare began to show themselves in use of men and materiel. Some of the principles for conducting scientific and technological warfare will be examined briefly here, not because they materially affected the outcome of this war but because they were to be the basis for winning wars in the future. Also they provide examples of developments which were not properly appreciated and used when they first appeared.

The surprise use of poison gas by the German at Ypres in 1915 and the use of tanks by the British in the battle of the Somme in September 1916 sent their adversaries reeling backward and resulted in sharp, though local, advantage to the users. Follow-up, or more extensive use at a time when the enemy was unprepared, could have given these weapons a more pronounced effect upon the outcome of the war.

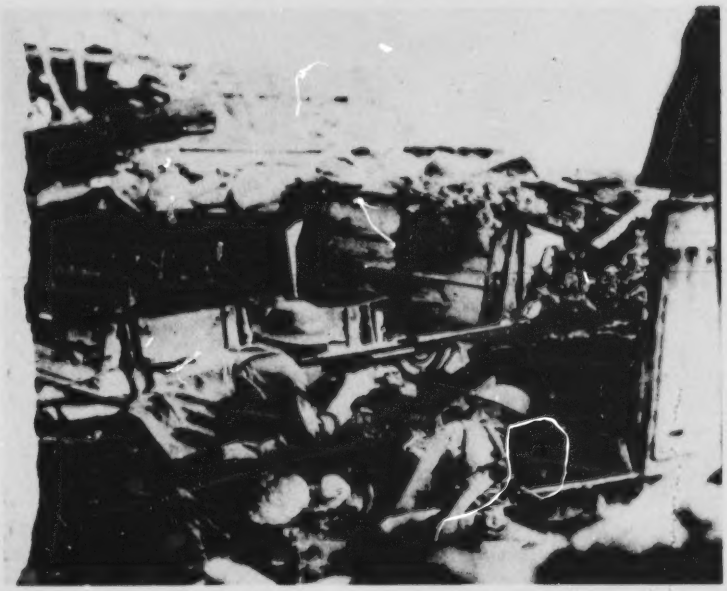

Figure 16. US soldiers manning a machine gun in the trenches in France.

Automotive transport and railroads were important in World War I, but were not significant in making offensive armies more mobile. Rather, these carriers were used in bringing up to the combat lines the masses of equipment and supplies which made the firepower so intense. Once on the battlefield, artillery was still often moved by draft animals. Only near the end of the war did weapons tend to become more mobile.

US military forces were slow in getting into action in the early part of the war and slow in adopting more advanced weapons. Within 3 months after the United States declared war, the first American division was en route to France, but 17 months passed before an American army commanded by American officers engaged in the fighting.

Although US industry was already producing vast quantities of materials for the Allies before this country entered the war, the tremendous amount of equipment needed for US military forces required a great deal of retooling and expansion in US

manufacturing plants. This took time. At first, many draftees were trained with dummy or obsolete weapons. To speed up the arming of troops, the War Department adopted the British Lee-Enfield rifle modified to take US ammunition. The British and French supplied machine guns and automatic rifles for most of the Army. But the US troops reaching France after 1 July 1918 were armed with American-made Browning machine guns and automatic rifles. These proved to be far more reliable and effective than those bought from the Allies.

AVIATION.—At the time the United States entered World War I, the Navy possessed 54 airplanes and 38 pilots. The Army Aviation Section had about 250 planes, none of them suitable for combat, and 78 pilots. At that time the British were flying North Sea patrols on a regular schedule, and the Germans and French each had over 2,000 airplanes in operation (Fig. 17).

The combat airplane was developed in World War I to the extent of the technological capability of that time. These primitive aircraft were used primarily by aerial observers, and the spectacular air battles of this war were fought chiefly for the purpose of achieving air control so that observations could be made with

Figure 17. German aircraft used in World War I.

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Figure 18. World War I Curtiss "Jennies."

greater certainty (Fig. 18). Limited as the capabilities of the models used in this war were, they had enough use in ground support, transportation, interdiction, and strategic bombing to provide farsighted men with some inkling of their ultimate roles (Fig. 19).

SEA WARFARE.—Germany nearly won the war by use of one weapon—the submarine. The renowned German **U-boat** had a skillfully designed periscope and was powered by an oil-burning diesel engine, which eliminated the danger of gasoline explosion (Fig. 20). Highly efficient torpedoes made the U-boat deadly; from the September day in 1914 when one of these vessels sank three British cruisers within an hour, it became apparent that the Allied navies faced a serious menace. These submarines were built in secrecy and were used at the very outset of the war to launch a full-scale attack against Allied commerce. Despite their initial advantage, however, the Germans did not have enough submarines to disrupt Allied shipping completely.—Before the

Figure 19. World War I bombardment aircraft.

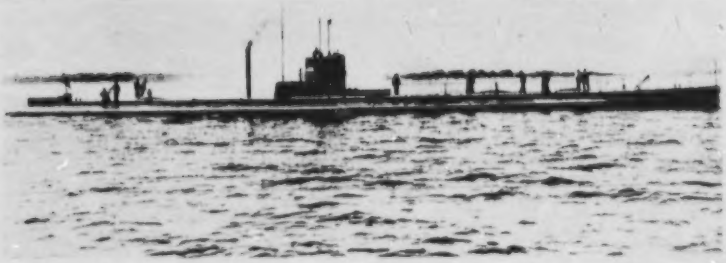

Figure 20. German U-boat.

weapon became decisive, the Allies had time to develop a defense against it.

The counter to the submarine attack was three-pronged: antisubmarine vessels (destroyers and smaller subchasers); the convoy system of moving supplies (and later, troops) across the Atlantic Ocean from the United States; and an extensive mining of the North Sea area through which the U-boats passed from their homeland bases. Exploding mine charges underwater at some distance from the vessel could crush the thin hulls of submarines. In about four months, 68,000 mines were jettisoned. These techniques separately and in combination, together with scouting aircraft and submarine nets, proved very successful (Fig. 21).

A gauge of the success of the antisubmarine campaign is the fact that, by the end of the war, over 2,000,000 American soldiers had been transported to France without the loss of a single man. By the spring of 1918, the tremendous drain and strain upon men in the German submarine service had precipitated a threat of mutiny at Kiel, the German U-boat headquarters, but by that time, this phase of the war had virtually ended. Yet before they were successfully curbed, the U-boats had sunk millions of tons of shipping and had even been able to cross the Atlantic to sink 79 vessels off the shores of the United States.

Battleships and other vessels were of great strategic importance during the war. Great Britain had the largest navy, and its vessels

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were able to contain the German fleet by weight of numbers. The British Navy, as it had for a century before, controlled the seas.

BETWEEN WORLD WARS I AND II

After the "war to end war," the United States sank again into a state of unpreparedness. Immediately after World War I, the American Expeditionary Force was disbanded, and the huge industrial complex geared to war was allowed to collapse. Small appropriations by Congress forced the Regular Army to subsist on what it had, as no funds were available for modern equipment or developmental research. Personnel strength also declined. Most of the scant Army expenditures went for more conventional forces and equipment rather than for the Army Air Service. The Navy did not lose as much strength as the Army, but many vessels were destroyed under the provisions of the naval limitation treaty of 1922.

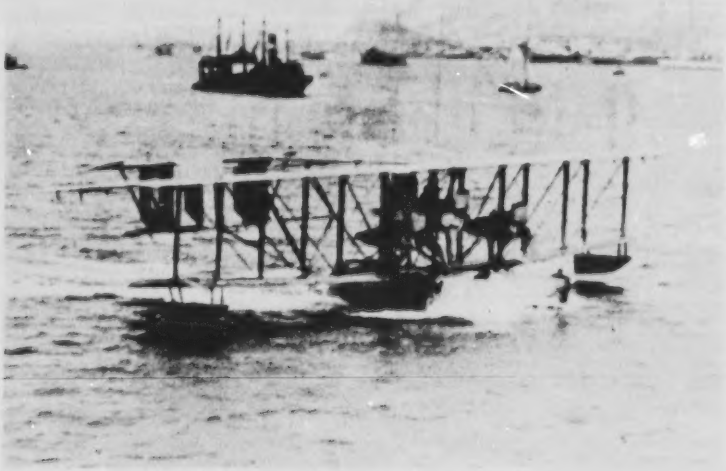

Figure 21. Curtiss flying boat, World War I.

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Military Policy Between the Wars

Storm clouds began gathering again in the 1930s—Japan's aggression in Manchuria and China, Mussolini's conquest of Ethiopia, and the rise of Hitler and his Nazi party in Germany. Also much of the world was in the grip of a depression which had closed down many consumer industries and caused serious unemployment. The dictatorships found this no great problem as they put their unemployed to work in a rapid buildup of war industries. In the United States, however, unemployment was widespread and there was little money for strengthening national security.

The democracies of the world were either unable or unwilling to employ collective security measures to head off the progress of the aggressor nations. When Hitler initiated his plan for the conquest of Europe by invading Poland on 1 September 1939, treaty obligations brought France and Great Britain to the aid of Poland, and so began World War II.

Again the United States attempted to maintain its neutrality, but again neutrality for a great international and commercial nation became impossible. Shock at Nazi atrocities, the fear, after the fall of France in 1940, that the democracies would be defeated, and the clear threat to national security caused the United States to come to the assistance of Great Britain and her allies. This was done at first by lend-lease arrangements for the supply of economic goods and war material, but a build-up of the military forces in the United States began at this point.

Army Forces Between the Wars

Although military budgets were slim for most of the period between wars, the decades were marked by some important organization and administrative changes in the Army. These changes began with the passage of the **Army Reorganization Act of 1920,** generally considered to be one of the most constructive pieces of military legislation ever adopted in the United States.

One of the underlying aims of the Army Reorganization Act was to promote the integration of the Regular Army and the

civilian components by establishing uniformity in training and professional standards. In that connection it established the Army of the United States as an organization of three components: (1) The Regular Army; (2) the civilian National Guard; and (3) the civilian Organized Reserves, consisting of an Officers' Reserve Corps and an Enlisted Reserve Corps. The training of the civilian components now became a major peacetime task of the Regular Army. That training resulted in an effective mobilization of the Guard and the Reserve elements into the active Army in 1940 and 1941.

The War Department furnished the Guard with equipment, with some financial support, and with Regular officers for instruction, drill, and field training. The Guard stood ready for immediate induction into Federal service whenever necessary. The Officers' Reserve Corps received further training through school, extension courses, and short tours of active duty. Its ranks were constantly replenished by officers newly commissioned in the Reserve Officers' Training Corps and the citizens' military training camps, both of which conducted very active programs during this period. Civilian components, as well as Regular Army personnel, received training in numerous special service schools.

A significant provision of this act was one which made the military air arm (known earlier as the Aviation Section of the Signal Corps) a combatant arm of the Army with the designation of Air Service (Fig. 22). Later it was to become the **Air Corps** (1926) and then the **Army Air Forces (1941).** The Army also was authorized to add two other branches, the Chemical Warfare Service and a Finance Department.

In a limited sense the United States began to mobilize its forces as early as the mid-1930s. In 1935, Congress authorized the Army to increase its strength, and in the face of mounting international tensions, subsequently voted larger military expenditures. Yet on the eve of the actual outbreak of war in Europe the enlisted strength of the Regular Army (also known as the Active Army) was still very low.

Technology Between the Wars

There were several important technological developments between World War I and World War II. The Army increased its use

Figure 22. The "unsinkable" German battleship **Ostfriesland** being sunk by aerial bombardment during Army-Navy tests in 1921. Gen Billy Mitchell, a strong proponent of an independent air force, accomplished this feat to demonstrate the importance of air power.

of mechanized equipment during this period and refined many of the technological advances of World War I.

One of the most important innovations was the development of the B-17 long-range bomber (Fig. 23) and the **Norden Mark XV bomb-sight,** originally developed for the Navy. Coupled with the speed, range, and altitude capacity of the B-17, the Norden bomb-sight answered the Air Corps' need for precision daylight bombing of land targets. Initially viewed as a defensive weapon by both the Army General Staff and Navy policy makers, the B-17 was first added to the US weapons inventory in limited numbers. Nevertheless, development of the B-17 provided the capability necessary for strategic air warfare in World War II.

In the same period, the US Navy conducted experimental work on many other new types of weapons and equipment. The primary emphasis was on the integration of naval aviation with the fleet and the development of amphibious techniques. Several methods of incorporating aviation were tried by the Navy. Kite balloons were found unsuitable as protection from hostile aircraft. The Navy experimented for a time with rigid airships, or dirigibles, and contracted with the Goodyear Tire and Rubber Company to build two ships. The **Akron** was completed in 1931 but crashed two years later (Fig. 24). The second airship, the **Macon,** was then launched, but in 1935, this craft developed a structural failure in the upper fin and sank off the California coast. After these disasters, air ships were generally rejected. Ship tenders were tried as bases for seaplanes, but their use was limited. The standard practice was to carry a few planes on battleships and cruisers, but the most successful development for transporting and servicing a large number of aircraft was the addition of flight decks to ships devoted primarily to this purpose. Steps

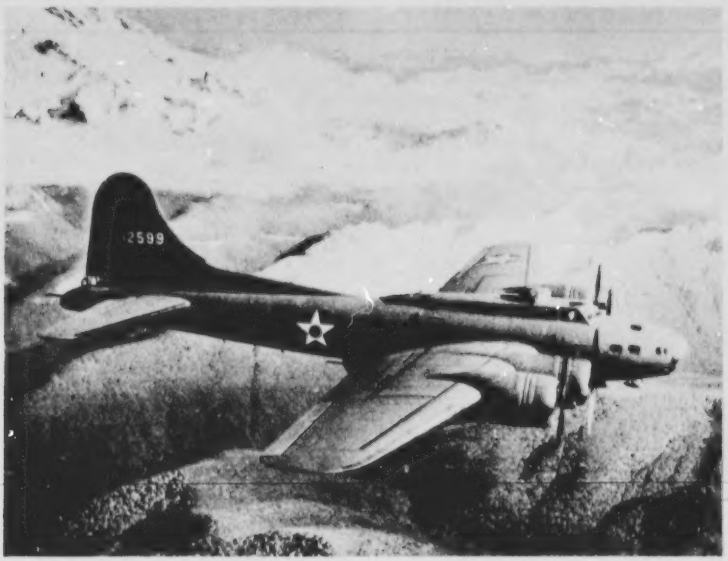

Figure 23. B–17 long-range bomber.

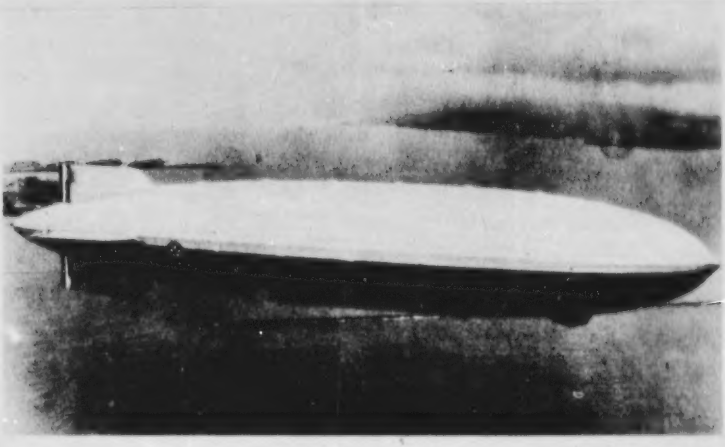

Figure 24. The ill-fated Akron.

were taken to make aircraft carriers an integral part of the fleet. Small individual carriers to spread the risks of loss were adopted for some operations, and greatly increased numbers of carriers were added to the fleet. The escort carrier was developed for auxiliary work, antiair operations, and gunnery. Improved specialized planes were added to the naval air arm, and dive-bombing tactics were practiced against moving targets. To the carrier task force were added battleships, cruisers, and destroyers. This fast carrier task force possessed tremendous striking power, mobility, range, and the ability to refuel and resupply while still at sea.

The Marine Corps made its greatest peacetime contribution to national security by perfecting amphibious warfare tactics. The problems connected with the water transport of troops, ship-to-shore movements, assault landings, naval gunfire and aviation support, and special landing craft and tactics were resolved. These developments were to be of great value during the many campaigns of the war in the Pacific.

WORLD WAR II, 1939–1945

The Pearl Harbor attack on 7 December 1941 plunged the United States into a two-front war for which the country was

still not prepared, despite the buildup which had already begun (Fig. 25). Following its long established pattern, the United States once again had time to prepare fully for victory *after war was declared*, but the effort was costly.

In spite of heavy losses in the early part of the war, the United States finally gained the initiative, and, with Allied forces, brought the war to a successful close. Our political isolation from international affairs, however, died with hundreds of US servicemen in the first hours of battle at Pearl Harbor. Whether the nation was ready to accept its role or not, World War II thrust inescapable responsibility for international leadership upon the United States.

World War II Military Forces

Once the war in Europe had started, President Franklin D. Roosevelt proclaimed a state of limited emergency and authorized an increase in enlisted strength of the Army and the National Guard. As one means of preparing for emergency ac-

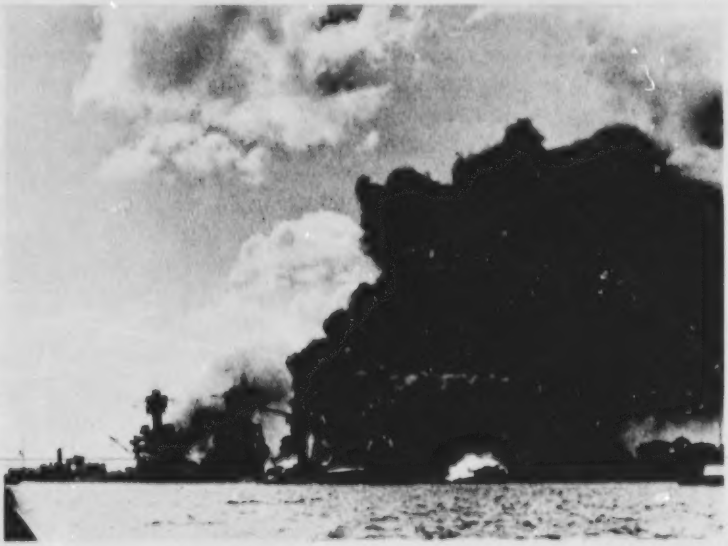

Figure 25. Pearl Harbor under attack by the Japanese, 7 December 1941.

tion, the Army engaged in what has been called its first genuine maneuvers in history. When the Nazi forces of Germany ran roughshod over Denmark, Norway, the Low Countries, and France in the spring and early summer of 1940, the United States adopted an enlarged mobilization program. Huge appropriations were approved to procure the items needed to equip and maintain a force of well over 1,000,000 men, including an enlarged Air Corps which was to be supplied with a then seemingly visionary 50,000 airplanes!

In the late summer of 1940, Congress authorized the President to induct the National Guard into Federal service and to call up the Organized Reserves. It then adopted the **Selective Service Act,** inaugurating the first peacetime draft in the history of the United States.

The National Guard, the selectees, and the Reserve officers to help train them were brought into service as fast as the Army could provide facilities to house, feed, equip, and train them. During the latter half of 1940, the Army more than doubled in size and by the time the fighting ceased in 1945, it was well over 8,000,000.

An equally rapid buildup occurred in the Army Air Forces. At the beginning of the war, the US Air Corps, as it was then called, was comparatively small. By the end of the war, however, the Army Air Forces had increased by some 2,000,000 and had acquired thousands of trainers, transports, fighters, and bombers.

As the war progressed, the operation of the Selective Service System threatened to deplete the civilian manpower in the lower age brackets. One means of relieving the threatened shortage was the use of volunteer women in noncombatant jobs. The **Women's Army Auxiliary Corps (WAAC),** subsequently shortened to **Women's Army Corps (WAC),** took form soon after the United States entered the war. Women were recruited in the Navy as **Women Appointed in Voluntary Emergency Service (WAVES).** The Marines also enlisted women. Additionally, there was an organization of women pilots known as the **Women Airforce Service Pilots (WASP).** The WASP were civilian employees of the Army Air Corps, their primary duty being to ferry planes.

An officer shortage also developed. In 1941, the War Department had only a few thousand commissioned officers who had devoted their whole time to professional training. Meanwhile, since mid-1940, the existing Army schools had concentrated upon improving the fitness of National Guard and Reserve officers for active duty. As a result of the Reserve Officers' Training Corps program, the training of officers in civilian components was more advanced when mobilization began than at the beginning of any previous war in which the United States had participated. Early in 1941, the War Department established officer candidate schools to train men selected from the ranks for junior leadership positions. The requirement for officers to command and staff a large Army proved to be rather high, especially since the Army Air Forces ruled that all pilots, navigators, and bombardiers must be commissioned. In order to obtain an adequate number of officers, the services resorted to such other means as granting commissions to experts in certain specialties directly from civilian life, followed immediately in some instances by special training in officer training schools.

Had it not been for the naval losses at Pearl Harbor on 7 December 1941, the United States Navy would have been better equipped for war than the Army. That was true despite the fact that following the **Washington Conference on Naval Disarmament** (1921-22) the United States scrapped tons of naval shipping and for a while even failed to replace obsolete vessels. In 1933 and 1934, Congress authorized a total of 172 new ships. By 1939, Congress, after prodding by the President, was committed fully to the concept of a two-ocean Navy. With the outbreak of the war in Europe in September of that year, construction commenced on several large vessels, and by the time of the Pearl Harbor attack, there were nearly 700 ships under construction. Procurement of naval aircraft was less rapid.

Navy personnel, including the Marine Corps and the Coast Guard, increased from a strength of less than half a million to well over 3 million. The Navy had an officer shortage problem comparable to that of the Army. To meet it, the Navy also emphasized a Reserve officers' program, shortened the four-year course at the Naval Academy to three, and granted direct commissions to qualified civilians.

World War II Military Technology

A multitude of refinements on old inventions, and some awesome new ones, had a tremendous impact on the conduct of World War II. By this time, the United States had realized its great potential as a power and as a producer of war materiel. Once again the nation had some measure of time to prepare its defenses.

While the discussion to follow is divided into considerations of the influence of technology upon land, sea, and air warfare, it should be kept in mind that air power, in particular, had a profound effect upon the way war was waged on land and sea.

LAND FORCES.—The relatively open character of World War II as compared to World War I was caused primarily by the ever-increasing firepower of weapons, coupled with their greatly enhanced mobility. Weapons were more efficient, lighter, fired more rapidly, and were supplied with more ammunition. In view of the capabilities of the improved weapons, static defense was impracticable. Those nations which depended upon massive fortifications to defend their borders speedily found themselves among the conquered.

Land warfare developments in the US Armed Forces during World War II were designed to counter the highly successful German blitzkrieg forces which used **Panzer** (mobile armored) divisions combined with tactical airpower (Fig. 26). The great reservoir of natural resources and industrial potential of the United States was put to the task of developing more efficient equipment for specialized forces of armored, motorized, and airborne troops. These were the forces necessary to overcome the enemy strength, to prevent a repetition of the stalemate of World War I, and, eventually, to provide the offensive punch for victory in the European theater. Highly specialized equipment gave equally highly trained troops the ability to fight amphibious, desert, jungle, mountain, arctic, commando, paratroop, and other types of operations in both the European and Pacific theaters of operations (Fig. 27). Another important technological development was concentrated packaged rations. This breakthrough aided materially in increasing the mobility of troops by freeing them from the necessity of having to depend on cumbersome mess equipment.

Figure 26. A once proud member of a German Panzer division immobilized by Allied action.

Figure 27. Jungle warfare in World War II.

Firepower of troops was greatly increased by the rapid development of such innovations as extremely mobile, self-propelled artillery, tanks carrying heavy rapid-fire guns, recoilless guns, rockets, proximity fuses, very reliable automatic small arms, and **shaped explosive charges.** These are charges packed in a projectile in such a way that the nose cone is left hollow causing the explosion on impact to be directed to the front. By properly equipping small forces, it was now possible to counter and overcome masses of troops by the concentrated fire of automatic weapons or even for one man to stop a tank by firing a shaped charge from a bazooka. While firepower became more deadly, greatly improved medical and surgical techniques saved a much larger percentage of the wounded of this war.

SEA FORCES.—At the outbreak of World War II, a pooling of the nation's scientific and industrial knowledge perfected and put into production newly invented and impressive naval weapons of war. These included transport vessels for landing troops and combat equipment (Fig. 28); specialized equipment of the combat engineers; electronic devices for accurate and speedy detection of the enemy; fire control equipment, which made the weapons

Figure 28. An amphibious landing in World War II.

Figure 29. World War II heavy cruiser.

effective at out-of-sight distances; and the very ships themselves upon which the guns, rockets, and airplanes were carried (Fig. 29).

Besides this, techniques for using the new equipment were developed. Extensive fleet maneuvers were held to find the best means of conducting operations during hostilities. Especially important was the development of naval tactics for integrating aerial and surface warfare. Considerable experimentation was also carried on with submarine warfare.

Because submarines were so important to German sea strength, it was the primary mission of the Navy to suppress them in the Atlantic Ocean in order that the sea lanes might be used for necessary vast movements of troops and supplies. In this task the Navy was ably assisted by land-based aircraft of the Army Air Forces.

Several inventions facilitated the detection of enemy submarines. A sound-detection device known as **"sonar"** enabled a surface vessel to emit an underwater sound wave and detect the echo returning from the hulls of submarines. Automatically, the device calculated the submarine's distance and bearing. Radar was em-

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ployed by surface craft and airplanes to detect surfaced submarines. A huge toll of submarines resulted from these discoveries. By early 1944, Adm Ernest King was able to announce that the U-boats had "changed status from menace to problem."

The developments in landing vessels and vehicles made amphibious warfare possible in World War II. For example, the Allies were able to make landings in Normandy, and so began the final phase of the European war (Fig. 30). Amphibious warfare was also very important in the Pacific theater.

AIR FORCES.—Perhaps the greatest technological achievements of World War II were the improvements made in aircraft and air armament. There were tremendous advances in the airframes and power plants. Rapid-fire guns, radar, rockets, **napalm** (jellied gasoline), and incendiaries greatly added to the striking power of military aircraft. High explosive superbombs **("blockbusters")** created havoc in Axis cities and greatly reduced their war-making capabilities (Fig. 31). The B-29 Superfortress and the atom bomb so paralyzed the will and ability of Japan to continue

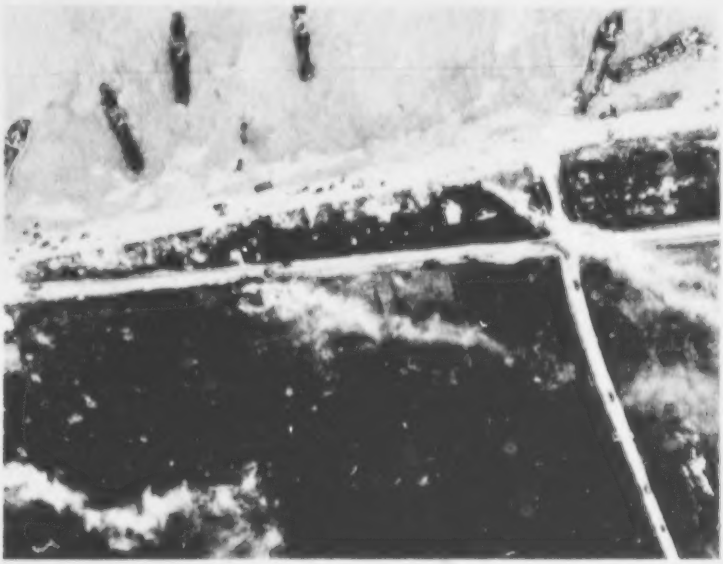

Figure 30. Allied troops landing on the Normandy beach. Notice tanks moving inland.

Figure 31. Heavy bombardment, World War II.

fighting that an invasion of the Japanese homeland was unnecessary.

POST-WORLD WAR II DEVELOPMENTS

At the end of World War II, the United States was the strongest nation the world had yet seen. It had become the greatest industrial power in the world; it possessed the strongest economy; it produced the most agricultural goods; its technology was the most advanced; its conventional military forces were the strongest; and for a short time it possessed the world's only nuclear weapon system.

In an age of developing supersonic speed and nuclear weapons, the United States no longer could stand aloof from international affairs. The potential devastation of another world conflict made it imperative to find some means of settling international disputes short of all-out war. Recognizing these facts, the United States gave full support to the aims of the United Nations (Fig. 32). As matters turned out, however, it was soon obvious that world peace was not assured. In the face of continuing international tensions, the United States was forced to rebuild its defenses.

International Complications 1945–1950

In spite of US hopes and intentions, the Allied victory in World War II destroyed one type of international opposition only to stimulate the growth of another. This was militant international communism, which seemed bent upon dominating much of the world through subversion and armed revolution. Communist strength after the war sought to fill the power vacuums in Europe and Asia which had resulted from the defeat of Germany and Japan. Unlike the United States, Communist nations, and more specifically the Soviet Union, did not demobilize at the end of the war but used their armed forces in their efforts to expand communism.

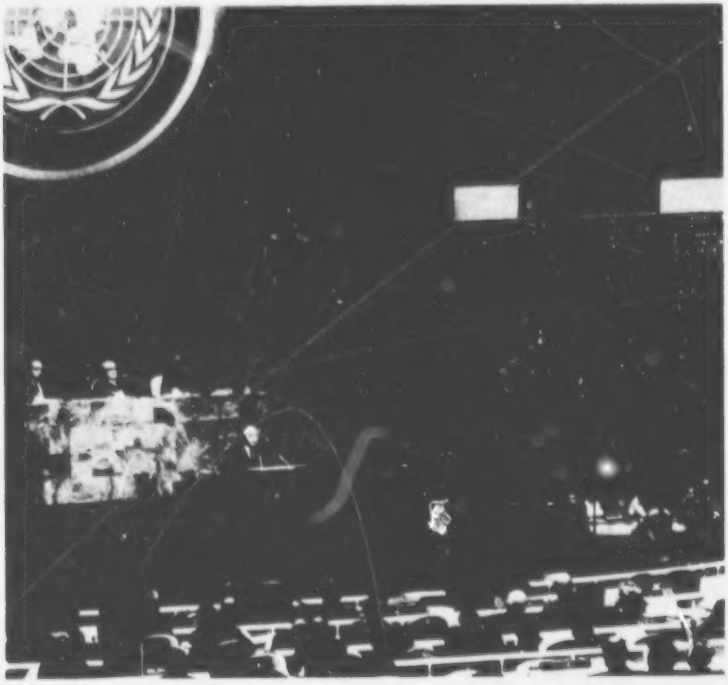

Figure 32. The United Nations.

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Figure 33. C-47s unloading at Templehof Airport during the Berlin Blockade.

A dramatic example of Communist efforts to control new territory during the period immediately after the war was the **Berlin Blockade** in 1948. The free world, with the United States playing a leading role, countered this attempt to squeeze the Western powers out of Berlin, by successfully airlifting enough supplies to sustain the city (Fig. 33). During the same period, Communist efforts to gain control in Greece and Turkey were thwarted with the help of the United States. As a further bulwark against the spread of communism, the United States initiated the European Recovery Program, better known as the **Marshall Plan.** This plan, named for Secretary of State George C. Marshall, provided not only financial aid but materials, machinery, and trained advisers to promote industrial growth in the war-weakened countries of western Europe. However, although the free world succeeded in containing communism in the West, the Chinese mainland fell to Communist control in 1949.

The deterrent of US nuclear warfare capability helped signifi-

cantly in preventing such incidents as the Berlin Blockade from flaring into World War III. Before the Korean conflict, military forces of the free world would have been hard pressed to cope with Communist forces.

Military Forces, 1945–1950

As noted above, after World War II the United States again demobilized rapidly. Fortunately, however, the Army began reorganizing its Reserve components so as to make them an integral part of the Army of the United States. The Army's goal was a National Guard capable of immediate mobilization, with units fully equipped and trained and an Organized Reserve Corps trained and organized for quick mobilization to supplement the Regular Army and the Guard. Both components established training programs under active Army guidance. Legislation authorizing inactive duty training and retirement benefits served as a boost to the programs. The Reserve components were thus ready

Figure 34. US ships relegated to a "mothball fleet."

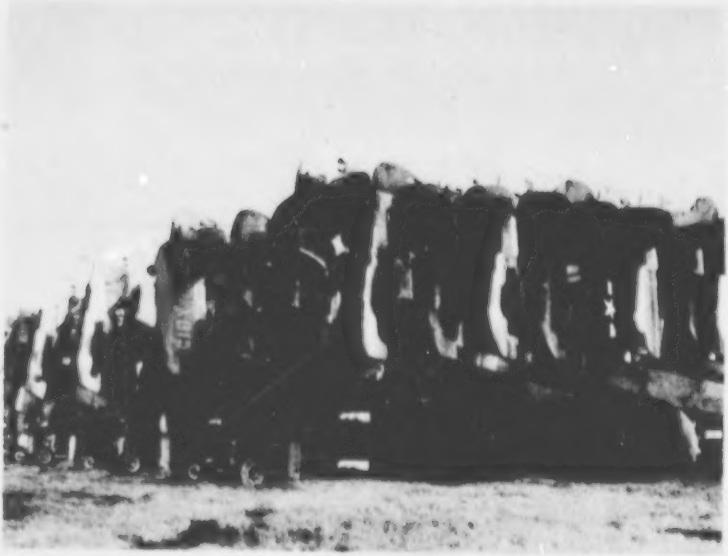

Figure 35. An example of aircraft demobilization after World War II.

to make notable contributions of trained personnel during the Korean conflict.

At the close of World War II, the US Navy was the most powerful naval force in the history of the world. Naval forces, however, were whittled down as rapidly as those of the Army. Several thousand vessels were declared surplus and placed in **"mothball fleets"** and personnel strength was reduced so sharply that it had nearly reached its prewar level by 1950 (Fig. 34). Some 672 vessels then constituted the active fleet. Fortunately, the Navy had instituted a Reserve program at the end of the war.

A similar cutback occurred in the Air Forces, both in personnel and aircraft. Within four years of the war's end, the total number of officers and airmen had decreased to less than half a million, and due to a sharp reduction in maintenance personnel, only a pitifully few aircraft were fit for immediate use.

The Air Force had plans for establishing 70 flying groups and increasing its manpower. Fifty-nine groups had been activated by 1948, but an executive decision, made in December of that year,

that the United States could afford only a 48-group Air Force, changed the program from one of expansion to contraction (Fig. 35).

The postwar years brought far-reaching changes in the organization of the US defense structure. These changes and their effect on national defense are the subject of the following chapter.

WORDS, PHRASES AND NAMES TO REMEMBER

Aeronautical Division of the Army Signal Corps
Air Corps
Akron
Army Air Forces (AAF)
Army Reorganization Act of 1920
Berlin Blockade
blockbusters
Chief of Staff
destroyer
Hydropneumatic recoil system
Lusitania
Macon
Maine
Marshal Plan
Militia Act of 1903
mothball fleets
napalm
National Guard
Norden Mark XV bombsight
Panzer
Selective Service Act
shaped explosive charges
Sonar
Springfield rifle
U-boat
Washington Conference on Naval Disarmament
Women Air Force Service Pilots (WASP)
Women Appointed in Voluntary Emergency Service (WAVES)
Women's Army Auxiliary Corps (WAAC)
Women's Army Corps (WAC)

REVIEW QUESTIONS

1. **What improvements were made in the US Army between 1865 and 1898?**
2. **What were the lessons learned by the United States from its experiences in the Spanish-American War?**
3. **List the changes in the organization and training of US defense forces that were made between 1900 and World War I. Describe the technological achievements of this period.**
4. **Why was the United States forced to enter World War I?**
5. **How were the defense forces brought up to strength? List the provisions of the National Defense Act of 1916 and the Selective Service Act.**
6. **What was the role of US aviation in World War I? How did it compare with aircraft employment by the Allies and Germany?**
7. **What was the impact of German submarines on Allied forces? How did the Allies combat this menace?**
8. **What were the significant aspects of The Army Reorganization Act of 1920?**
9. **List the developments in technology between World War I and World War II and the innovations employed by the land, sea, and air forces in World War II.**
10. **What important international developments occurred during the period between the end of World War II and 1950?**

THINGS TO DO

1. Research and report on the construction of the Panama Canal, noting particularly the dimensions and operation of the locks and the safety devices with which they are equipped.
2. If you can locate any equipment, such as packaged rations, musette bags, or even uniforms, used by the US forces in World War I or World War II, bring it to class for exhibit.
3. From outside reading make a book report on the use of air power in either of the World Wars.

SUGGESTIONS FOR FURTHER READING

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FREIDEL, FRANK B. *The Splendid Little War*. Boston: Little, Brown, 1958.

HARTNEY, LT COL HAROLD. *Up and At 'Em*. Harrisburg, Pa.: Stackpole Sons, 1940.

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The Department of Defense

THIS CHAPTER explains why and how the present Department of Defense was established, the constitutional provisions on which it is based, and its responsibilities. First, the chapter outlines the legal foundations for the Department. Next, it discusses the defense responsibilities of the President and Congress. Finally, the chapter traces the development of the Department of Defense, from the National Security Act of 1947 through the Reorganization Act of 1958, and describes its functions. When you have studied this chapter, you should be able to do the following: (1) cite two provisions of the Constitution that provide the legal foundation for the Department of Defense; (2) explain the responsibilities of the President and Congress in National defense; (3) list three defense-related agencies in the Executive Office; (4) outline the significant changes in the US defense structure that resulted from the National Security Act of 1947 and list the major revisions provided by each of the subsequent Amendments and Reorganization plans; (5) list the primary tasks of the Secretary of Defense and list three agencies in the Department of Defense; (6) define the role of the Joint Chiefs of Staff and list three of their functions; (7) define unified and specified commands.

AS THE UNITED STATES began to emerge as a world power at the beginning of this century, there was a growing awareness among its military and civilian leaders that the old system of separate departments for the Army and the Navy needed to be replaced and that some form of coordination of their operations was needed. Between the two World Wars, numerous proposals and plans were put forth for this purpose; but while both departments were agreeable to the idea of greater cooperation, neither the Army nor the Navy favored actual unification, nor did either of them approve the idea of establishing a separate air force.

The need for interservice cooperation became acute in World War II. A number of agencies and committees were established

to coordinate operations in the various theaters of war, one of the most successful systems being the Joint Chiefs of Staff. However, peace did not end the need for coordination of interservice operations and administration.

After two years of working on the problems involved, a unification plan was developed which was accepable to both the Army and the Navy; and Congress enacted the **National Security Act of 1947.** This was the first step in unifying the services and creating what is now the Department of Defense. This same act created the Air Force as a separate service.

CONSTITUTIONAL PROVISIONS FOR NATIONAL DEFENSE

The act of 1947 and subsequent legislation to further reorganize the Armed Forces were well within the framework of the Constitution. The Founding Fathers, realizing that they could not foresee the exact course that the nation would follow in the years to come, had wisely included in the Constitution certain statements that permitted liberal interpretation, thus laying down flexible guidelines for future statesmen. For instance, the intent of the Constitution, according to the Preamble, is to "provide for the common defense" and to "promote the general welfare." These provisions are repeated substantially in the section of the Constitution dealing with the powers of Congress, which states that the legislative body shall have the power "To make all laws which shall be necessary and proper for carrying into execution the foregoing powers. . . ." The enabling laws setting up the Department of Defense and the Air Force are recognized as necessary and proper to provide adequate defense and promote general welfare. In fact, the Preamble and several passages in the body of the Constitution establish the authority from which flows all legislation, executive acts providing for national defense, and regulations which govern the military instrument of national defense.

One of the most important provisions of the Constitution is the guarantee of civilian control of the military. A basic tenet of the US Government has always been that all military forces should be controlled by civilians. Since the founding of the nation, the people have jealously guarded this right.

The President

The best known provision for civilian control is in Article II of the Constitution which states:

> The executive power shall be vested in a President of the United States of America . . . The President shall be Commander in Chief of the Army and Navy of the United States, and of the Militia of the several States, when called into the actual service of the United States.

The Constitution definitely gives the President command responsibility over the Armed Forces, but it does not spell out the extent of the Commander in Chief's powers. The President's powers have defied definitive interpretation by the Supreme Court, which has avoided entanglements, when possible, in contests between the President and Congress for the direction of military policy. The office of the Commander in Chief is, therefore, essentially a product of growth and adaptation, ungoverned by precise legal definition. But, being undefined, it has been able to be responsive to military crises.

Although only Congress can declare war, the President can order defense of the nation if it is suddenly attacked (Fig. 36). When Japan attacked Pearl Harbor without warning 7 December 1941, US forces were in action against the enemy before the official declaration of war.

If, in the future, an aggressor were to launch a nuclear missile attack against the United States, it is possible that the resulting war might enter the decisive phase before Congress would have time to declare war. The President, by virtue of the power granted to him as Commander in Chief of the Armed Forces, must be free to act in national emergencies.

The Constitution lays a heavy burden of responsibility for national security on the President, and although he delegates many of his responsibilities to others, he reserves the right to take direct action in a national emergency and the right to make the final decision in military matters which affect national policy.

The Congress

The framers of the Constitution reserved to Congress certain rights relative to military control. These rights strengthen the machinery of civilian control and, at the same time, act as a check

Figure 36. The White House.

and balance on the powers of the President. The Commander in Chief is, therefore, subject to some restrictions by Congress, which exercises much control over the executive branch by passing enabling legislation, approving key officials, and exercising budgetary control (Fig. 37).

Article I, Section 8, of the Constitution gives Congress the power "to lay and collect taxes, duties, imposts and excises. . . ." Congress controls the nation's purse strings. Without congressional approval for defense funds, the President would soon be unable to maintain the Armed Forces.

The Congress is also empowered: "To declare war . . . and make rules concerning captures on land and water. . . ." The important power, given exclusively to Congress to declare war, was intended, in part, to reduce the possibility that one man alone might declare war. This provision does not prevent the President from ordering or permitting defense of the nation. It does insure, however, that neither the President nor Congress can exercise complete control over the nation's military instrument.

In an additional provision, the Constitution states that the Congress has the right "To raise and support armies, but no appropriation of money to that use shall be for a longer term than two years. . . ." This two-year limit was meant primarily to deter groups or individuals who might, with the aid of almost unlimited funds and military power, seek to seize or consolidate positions of military or political power. No time limit was put on Navy appropriations, however, because at the time the Constitution was written, it was generally believed that any danger of a power seizure would come from the Army rather than the Navy. The two-year limit on Army funds has promoted some economy in that it acts as a check on the misuse of funds and helps to prevent contracting too far in advance for material that may not be needed by the time of delivery. On the other hand, the time limit has, at times, hampered long-range planning to strengthen the defense establishment.

The powers of Congress in providing for defense are further outlined in Article I, Section 8:

Figure 37. The Capitol of the United States.

To provide and maintain a navy;
To make rules for the government and regulation of the land and naval forces. . . .

* * * * *

To provide for organizing, arming, and disciplining, the militia, and for governing such part of them as may be employed in the service of the United States, reserving to the States respectively the appointment of the officers, and the authority of training the militia according to the discipline prescribed by Congress. . . .

The Executive Branch

Although subject to congressional restraint, the President stands at the pinnacle of the National Defense Establishment. In the position of Commander in Chief, his responsibilities are awesome. It is said that the President of the United States is the loneliest man in the world. President Harry S. Truman certainly must have felt this crushing solitude when he had to make his decision to drop the first atomic bomb in the full knowledge that the responsibility for the consequences would be his alone.

Although most often the President, alone, must make the final decision in the execution of his various responsibilities, his decision is influenced by a body of advisers. In fact, the Constitution provides that the President may require the opinion, in writing, of the principal officer in each of the executive departments upon any subject relating to the duties of his particular office. Because of the staggering weight of the duties that the President must carry under the US system of government, Chief Executives, from President Washington to the present time, have relied increasingly upon subordinates for advice in carrying out their responsibilities.

The traditional advisory group to the President is his Cabinet, which now includes the Secretaries of 11 departments: Secretary of State, Secretary of Defense, Secretary of the Treasury, Attorney General, Secretary of Housing and Urban Development, Secretary of the Interior, Secretary of Agriculture, Secretary of Commerce, Secretary of Labor, Secretary of Transportation, and

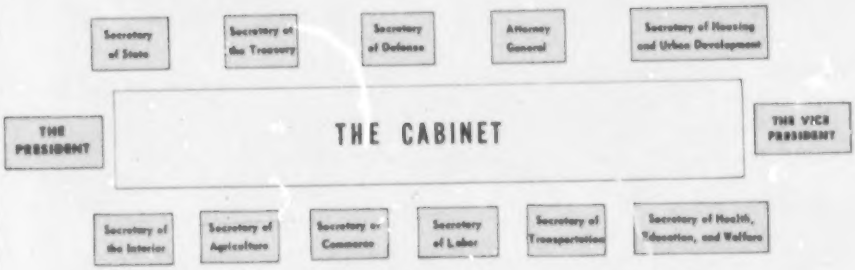

Figure 38. Members of the Cabinet.

Secretary of Health Education and Welfare (Fig. 38). The basic duties of the Cabinet members are to advise the President on matters concerning their own departments, but the President may call on any or all of them for advice on defense matters. In problems of defense, however, the President relies for the most part on advisory bodies appointed to deal with specific problems of defense. These advisory bodies are a part of the Executive Office of the President.

The Executive Office of the President

The Executive Office of the President includes the White House Office and such agencies as the Office of Management and Budget, the National Security Council, the Central Intelligence Agency, the National Aeronautics and Space Council, and the Office of Emergency Preparedness (Fig. 39).

THE WHITE HOUSE OFFICE.—The White House Office might be described as the President's personal advisory group. Its membership consists of friends and associates of the President who are not otherwise connected with the Government but whose opinions and specialized knowledge on national and international affairs he values. The White House Office simply makes official a practice followed by most Presidents in the nation's history, that of seeking the advice of trusted friends as well as the advice of the Cabinet. A famous example of these informal groups was the one attached to President Andrew Jackson—his critics sneeringly referred to it as the **"Kitchen Cabinet."** Today, the members of

what might once have been called a "kitchen cabinet" have a more formal relationship in that they hold office by executive appointment.

In the development of defense policies, however, four top-level agencies in the Executive Office have become the dominant advisers, and defense policies are coordinated among them.

THE NATIONAL SECURITY COUNCIL.—As the United States has had to assume increasing responsibility in international affairs, the President has frequently been called upon to take immediate action in matters of both national and international defense. The function of the **National Security Council** is to help him take action in such emergencies. Primarily, the Council advises the President concerning matters relating to national security, which, if unresolved and unregulated, would cause confusion and cross-purposes among agencies dealing with domestic, foreign, and military policies. The establishment of this Council has been one of the most effective steps ever taken to integrate high-level foreign, domestic, and military policy. When the needs and desires of individuals who formulate foreign policy, for example, conflict with those of persons who concern themselves with regulating trade or domestic economic policies, the National Security Council gives advice.

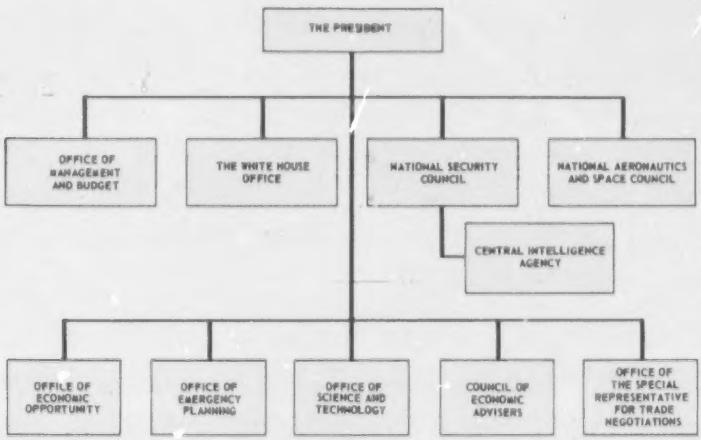
THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
THE WHITE HOUSE OFFICE
NATIONAL SECURITY COUNCIL
NATIONAL AERONAUTICS AND SPACE COUNCIL
CENTRAL INTELLIGENCE AGENCY
OFFICE OF ECONOMIC OPPORTUNITY
OFFICE OF EMERGENCY PLANNING
OFFICE OF SCIENCE AND TECHNOLOGY
COUNCIL OF ECONOMIC ADVISERS
OFFICE OF THE SPECIAL REPRESENTATIVE FOR TRADE NEGOTIATIONS

Figure 39. Executive Office of the President.

The Council, established by the National Security Act of 1947, was made a part of the Executive Office in 1949. It is composed of the President (who acts as the chairman), the Vice President, the Secretary of State, the Secretary of Defense, and the Director of the Office of Emergency Preparedness. Secretaries and Under Secretaries of other executive departments and of the military departments may serve as members of the Council if appointed by the President by and with the advice and consent of the Senate.

Among the advisers to the National Security Council are the Chairman of the Joint Chiefs of Staff and the Director of the Central Intelligence Agency. The Council staff is headed by a civilian executive secretary appointed by the President.

The basic functions of the National Security Council are to appraise and assess the objectives, risks, and commitments of the United States in relation to its actual and potential military power. It also examines the policies of those governmental agencies which are concerned with matters of national security. Results of the Council's investigations and deliberations are transmitted to the President in the form of recommendations. The frequency of the meetings of the National Security Council and the extent to which it is actually called upon to exercise its function varies with each President and with world conditions. The Council may serve as a clearing house for new basic military, economic, and foreign policies of the United States. In the past, some decisions shaped by the Council have had quicker and more profound effects than laws passed by the Congress or decisions of the Supreme Court.

THE CENTRAL INTELLIGENCE AGENCY.—The **Central Intelligence Agency (CIA)** is an auxiliary of the National Security Council. The Agency's Director, who is appointed by the President, may be either a civilian or an officer in the Armed Forces on active duty or retired. The supervisory authority of the Director is the same, however, whether he is military or civilian, and he has no special control functions with respect to the Armed Forces.

The romantic concept of the CIA as a cloak-and-dagger operation has little foundation in fact. On the contrary, the Agency works with the precision of a scientific research foundation, constantly building its knowledge of the latest advances in science and technology to keep abreast of the nation's potential enemies.

The CIA supplies intelligence reports to the National Security Council and makes recommendations to the Council on coordination work. The CIA also correlates intelligence gathered by other agencies.

THE OFFICE OF MANAGEMENT AND BUDGET.—This office holds the purse strings of the Government in a tight grip and strongly influences defense policy. In fact, some Department of Defense projects are never activated because they have not been approved by the **Office of Management and Budget,** and legislative proposals are seldom enacted by Congress without a favorable endorsement from this powerful office.

In exercising its authority, the Office of Management and Budget prepares and administers the national budget and formulates the Government's fiscal program. The Office also plans the administrative management of the executive departments and agencies and aids the President to achieve greater economy and efficiency in the conduct of governmental services.

NATIONAL AERONAUTICS AND SPACE COUNCIL.—An additional defense-related advisory agency to the President is the **National Aeronautics and Space Council (NASC),** which functions in somewhat the same way as the National Security Council. Just as it was necessary to bring together top officials of the Government to advise the President and help him to coordinate national and military policies, it was also essential to bring the knowledge of science and technology to bear at the highest governmental levels. With the advice of the National Aeronautics and Space Council, the President develops a comprehensive program of aeronautical and space activities, allocates responsibilities, and settles any differences which may arise among Government agencies regarding space exploration and aeronautical research.

The present National Aeronautics and Space Council was established by the National Aeronautics and Space Act of 1958 as amended in 1961. The Chairman of the Council is the Vice President of the United States. Other members include the Secretary of State, the Secretary of Defense, the Administrator of the National Aeronautics and Space Administration, and the Chairman of the Atomic Energy Commission. Specific functions of the Council are to advise and assist the Chief Executive on relevant plans, policies, and programs; to fix responsibilities of the agencies of the Government which are engaged in aeronautical and

space activities; and to develop a comprehensive program of such activities.

Interchange of information takes place between the National Aeronautics and Space Administration and the Department of Defense through the **Aeronautics and Astronautics Coordinating Board.** This Board is cochaired by the Deputy Administrator of the National Aeronautics and Space Administration and the Director of Defense Research and Engineering and has additional members appointed jointly by the Administrator of the National Aeronautics and Space Administration and the Department of Defense. When there are differences of opinion between the two organizations or when direction is otherwise needed, the President, with the advice of the National Aeronautics and Space Council, takes the necessary action. With the assistance of the Council, the President makes a continuous survey of all important aeronautical and space projects, developing from his findings one comprehensive program and assigning responsibilities as he believes best.

Great expenditures are required in developing advanced manned aircraft, antimissile missiles, and intercontinental ballistic missiles. A difficult question involves deciding which weapon projects should receive how large a share of the budget. When large sums are spent on a military project, there must be some promise of developing a weapon that can be produced and ready for use before it becomes obsolete. On the other hand, research tied too closely to a weapon requirement may not achieve satisfactory results. Practically every major breakthrough in weapons was made possible because of the untiring efforts of scientists who did research in pure theory. Military research and engineering should be organized to tap the resources of the entire scientific community as well as to pursue strategic objectives.

OFFICE OF EMERGENCY PREPAREDNESS.—Another defense-related agency is the Office of Emergency Preparedness. As its name implies, this agency is concerned with formulating plans for the use of national resources, the continuity of the Government and a stable economy in case of enemy attack or other national emergencies. The Office of Emergency Preparedness also provides overall direction for and coordination of civil defense programs at the Federal, State, and local levels.

Other Offices and Agencies

The other offices and agencies in the Executive Office of the President are the Office of Economic Opportunity, Council of Economic Advisers, Office of Science and Technology, and the Office of the Special Representative for Trade Negotiations. While not directly charged with defense responsibilities, these agencies may contribute important information in defense-related discussions.

CREATION OF THE DEFENSE DEPARTMENT

Of all of his advisers, the President depends primarily on the Secretary of Defense for assistance and guidance in developing and executing national security policies. Prior to 1947, top-level responsibilities for defense matters were largely divided among the President, the Secretary of War, and the Secretary of the Navy. The responsibility for coordinating efforts between land and sea forces (and later air forces) lay primarily with the President. This arrangement permitted the existence of a strong potential for uncoordinated activities in the relatively large and technologically advanced Armed Forces in existence after World War II. Additionally, the longest reach and the most potent punch rested now, not in either land or sea forces, but in the Army Air Forces. Faced with an increasing need for a well-coordinated defense effort, Congress passed the National Security Act of 1947 creating the National Military Establishment.

The National Security Act of 1947

The National Security Act eliminated the old concept of strictly divided control over the US Army and the US Navy below the level of Commander in Chief. The 1947 law provided a considerably broadened concept of defense organization and emphasized the interdependent relationship between military and civilian elements in the Government.

To provide a comprehensive defense program and to integrate policies and procedures in departments and agencies concerned with defense, the Congress first established three agencies outside

the National Military Establishment. These agencies were the National Security Council; its subsidiary, the Central Intelligence Agency; and the National Security Resources Board (the last of which was later absorbed into the civil defense structure).

The "Declaration of Policy" section in the 1947 law stated that the purposes of the new legislation were:

> to provide three military departments for the operation and administration of the Army, the Navy (including naval aviation and the United States Marine Corps), and the Air Force, with their assigned combat and service components; to provide for their authoritative coordination and unified direction under civilian control but not merge them; to provide for the effective strategic direction of the Armed Forces and for their operation under unified control and for their integration into an efficient team of land, naval, and air forces.

The National Military Establishment was headed by a Secretary of Defense, who was to assist the President in all matters relating to national security, coordinate and develop general defense policies, and exercise control over the military departments. Additionally, he was to eliminate unnecessary duplication in procurement, supply, transportation, storage, health, and research. Finally, he was to coordinate preparation and submission of budget estimates to the Bureau of the Budget.

In addition to creating the position of Secretary of Defense, the National Security Act of 1947 also created three executive departments within the National Military Establishment. These were the Department of the Navy, the Department of the Army, and the Department of the Air Force.

This action represented two very significant changes in the defense structure. First the Department of the Army was created from the Department of War and the Secretary of War was redesignated the Secretary of the Army. Second, the establishment of the Department of the Air Force gave the US Air Force coequal status with the US Army and the US Navy.

Another significant portion of the 1947 law established the Joint Chiefs of Staff (JCS) within the National Military Establishment. During World War II, the Joint Chiefs of Staff consisted of a personal representative of the President, the Army Chief of Staff, the Chief of Naval Operations, and the Commanding General, Army Air Forces. The wartime organization had existed only on Presidential order, however, and its status in the postwar period was uncertain. The National Security Act made the Joint

Chiefs of Staff a permanent and vital part of the defense structure. The new Joint Chiefs consisted of the Chief of Staff, US Army; Chief of Staff, US Air Force; the Chief of Naval Operations; and "the Chief of Staff to the Commander in Chief, if there be one," The Joint Chiefs were to be the principal military advisors to the President and the Secretary of Defense and they were to be aided by a Joint Staff of one hundred officers.

Finally, the 1947 act created a Munitions Board and Research and Development Board. These were subsequently abolished and their functions were transferred to the Secretary of Defense

Despite the improvements it contained, the National Security Act had a number of weaknesses. First, the Secretary of Defense had been given neither sufficient authority nor sufficient staff to accomplish his tasks. Although he had been given general authority over the entire National Military Establishment, he was allowed only three civilian assistants to aid him in carrying out his planning and supervision; and the individual military Secretaries were allowed to bypass him and go directly to the President or the Bureau of the Budget with proposals concerning their Departments. Furthermore, there was no provision for a Chairman of the Joint Chiefs of Staff. This severely hampered their efforts to resolve the differing points of view concerning missions, strategy, and weapon systems among the three armed services. The inadequacies of the 1947 act soon generated considerable confusion and difficulty.

Establishment of the Department of Defense, 1949

By 1949, the **Hoover Commission,** which was studying the organization of the Federal Government, and the first Defense Secretary, James Forrestal, had both made a number of suggestions for improvement in the defense structure. Their suggestions, as well as the problems encountered in defense operations, resulted in the National Security Act Amendments of 1949.

The first 1949 amendment provided for an Under Secretary of Defense (later renamed Deputy Secretary of Defense), who was to aid the Defense Secretary as directed and act for him when he was either absent or disabled.

The second amendment of 1949 changed the name of the National Military Establishment to the Department of Defense and

converted it to a Cabinet-level status. At the same time the Departments of the Army, Navy, and Air Force were downgraded to separately administered Departments within the Department of Defense (Fig. 40).

The 1949 law significantly increased the powers of the Secretary of Defense. The military Secretaries no longer could bypass the Defense Secretary and go directly to the President or the Bureau of the Budget (as it was then called) with their reports and recommendations. They could, however, go directly to Congress after first informing the Secretary of Defense. The law also gave the Secretary of Defense the power to abolish, consolidate, reassign, or transfer any function of his Department after reporting his intended changes to the Congressional Committee on Armed Services. Additionally, the law gave him more administrative help by creating three Assistant Secretaries of Defense, including a Comptroller, adding a chairman to the Joint Chiefs of Staff, and increasing the Joint Staff from 100 to 210 officers.

DEFENSE REORGANIZATION AFTER 1953

In the year that the Korean War ended, Congress again undertook to modify the US defense structure.

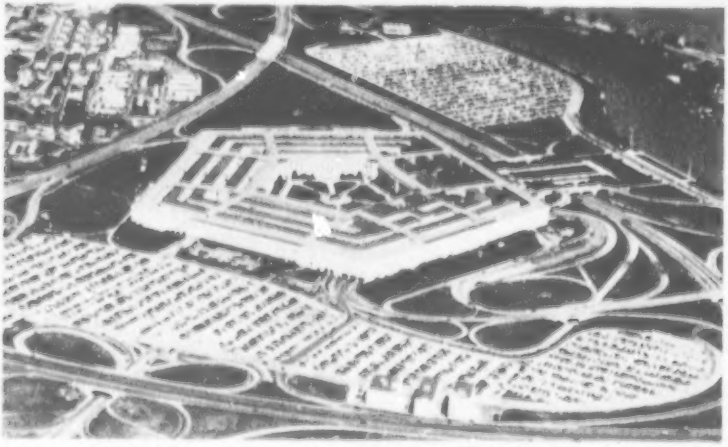

Figure 40. The Pentagon.

Reorganization Plan No. 6, 1953

Reorganization Plan No. 6 of 1953 formalized the high-level chain of command in the US defense organization to run from the President to the Secretary of Defense through the Joint Chiefs of Staff to the Secretaries to the three military departments to each Chief of Staff and, finally, to the commanders of the unified and specified commands.*

The 1953 law also abolished four defense department boards and agencies dealing with munitions, research and development, supply management, and installations. The functions of these boards and offices were transferred to the Secretary of Defense and six additional Assistant Secretaries and a General Counsel were added to handle them.

Finally, the 1953 reorganization gave the Chairman of the Joint Chiefs of Staff more authority in relation to the Joint Staff.

The Reorganization Act of 1958

Although the statutes of 1947, 1949, and 1953 provided for much greater coordination in the US defense structure, President Eisenhower and others felt that the organization was still too cumbersome for the rapid response demanded by modern weapon systems. Since this was also an important research and development period (especially in the missile field), Congress once again took action to reorganize the defense structure by passing the **Reorganization Act of 1958.**

The most significant feature of the act was the establishment of a firm command line from the Secretary of Defense to the unified and specified commands. From the time of their creation during World War II up to the passage of the act in 1958, the so-called unified commands were not truly unified. The forces assigned to the unified commands were actually under the command of their own service chiefs except when an emergency occurred, at which time the unified commander was given full authority over the forces assigned to him. This command structure reduced the effectiveness of wartime combat commanders during peacetime oper-

*Unified command: forces of two or more services; Specified Command: forces of one service. For fuller explanation see page 97

ations and in preparation for wartime operations. Moreover, as noted earlier, operational command channels before 1958 involved four levels of control: from the President to the Secretary of Defense, through the Joint Chiefs of Staff to the Secretary of the military department then to the military Service chief, and finally to the unified commander.

The Reorganization Act of 1958 changed this channel and made it very clear that the forces assigned to the unified or specified commands were under the full operational command of the unified or specified commanders. The Service Secretaries and the military chiefs of the services were removed from the command channel. Thus the present chain of operational command runs from the President and the Secretary of Defense through the Joint Chiefs of Staff directly to the commanders of the unified commands. This streamlining of the operational command allows the Joint Chiefs of Staff more time to deal with matters of command and high-level strategic direction. The chain of command for support activities, such as training and logistics, remained unchanged (Fig. 41).

Other provisions of the 1958 Act authorized the Defense Secretary to assign specific weapon systems to each of the services (with congressional approval), reduced the number of Assistant Secretaries from nine to seven, and created the position of Director of Defense Research and Engineering.

Except for assuming responsibility for the civil defense program in 1961, the Department of Defense has undergone no major changes since its reorganization in 1958. It is to the Secretary of Defense and his assistants that the President delegates the largest share of responsibility for implementing decisions on matters of national defense.

SECRETARY OF DEFENSE AND POLICY ADVISERS

The **Secretary of Defense** is the principal assistant to the President for military matters. As head of the Department of Defense, he is responsible for policies and programs and for the control of the military forces. His primary tasks are: (1) strategic and tactical planning, (2) operational command, (3) research and engineering, and (4) management of supplies and services among the

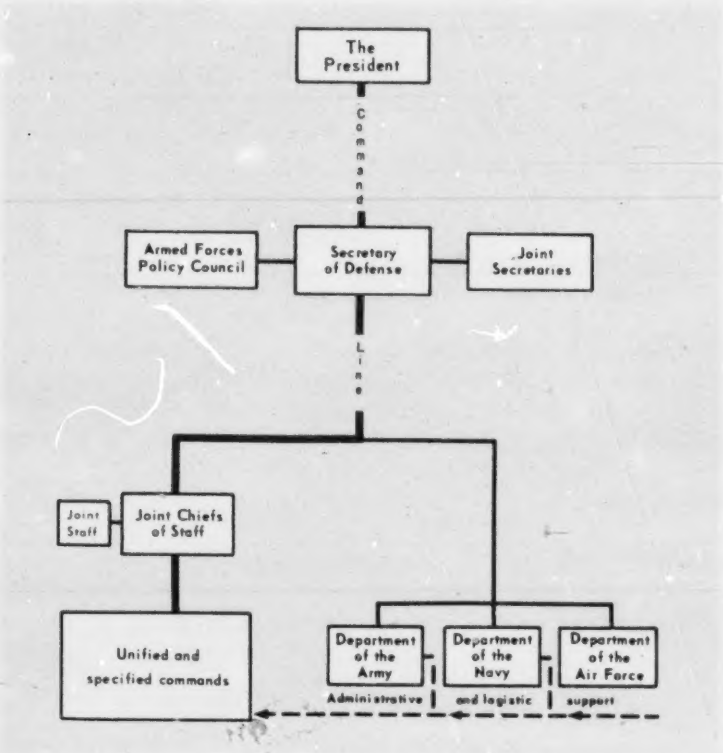

Figure 41. Operational command structure after the Reorganization Act of 1958.

military departments. He also serves as a member of the National Security Council, the National Aeronautics and Space Council, and the North Atlantic Council.

In the performance of these varied and demanding duties, the Secretary requires the help of many assistants, chief of whom is the Deputy Secretary of Defense.

Appointed from civil life by the President and confirmed by the Senate, the Deputy acts for the Secretary of Defense when the latter is absent or disabled or when he so directs. The Deputy also represents the Department of Defense on such governmental

and international groups as may be determined by the Secretary of Defense.

In formulating broad defense policy, the Secretary of Defense is assisted by a number of advisory bodies and by individual advisers. The most important policy advisory body working directly with the Secretary of Defense is the Armed Forces Policy Council.

The **Armed Forces Policy Council** advises the Secretary of Defense on matters of broad policy relating to the Armed Forces, and considers and reports on any other matters that, in the opinion of the Secretary, need attention. The Council is composed of the Secretaries of the Army, Navy, and Air Force, the Chairman of the Joint Chiefs of Staff, the members of the Joint Chiefs of Staff, and the Director of Defense Research and Engineering. The Commandant of the Marine Corps regularly attends the sessions of the Armed Forces Policy Council. Also, other officers in the Department of Defense and other parts of the executive branch of the Government may be invited to attend the meetings.

The **Office of the Secretary of Defense** includes his immediate office staff and operates in much the same way as the Executive Office of the President. Those who head sections within the Office of the Secretary of Defense are the Director of Defense Research and Engineering, Assistant Secretaries, Assistants to the Secretary, and the General Counsel (Fig. 42).

JOINT CHIEFS OF STAFF ORGANIZATION

The **Joint Chiefs of Staff (JCS)** consist of the Joint Chiefs group itself, including the chairman; the Joint Staff, which assists the Joint Chiefs; and certain agencies and groups which perform work vital to the functioning of the JCS organization.

The Joint Chiefs, assisted by the Joint Staff, issue operational orders by authority of the Secretary of Defense to the unified and specified combat commands and do operational and strategic planning. They review the plans and programs of unified and specified commands, review major personnel and logistic requirements of the Armed Forces, and establish unified doctrine. This body assigns logistics responsibilities to the military services and formulates policies for joint training and for coordination of the education of members of the military forces.

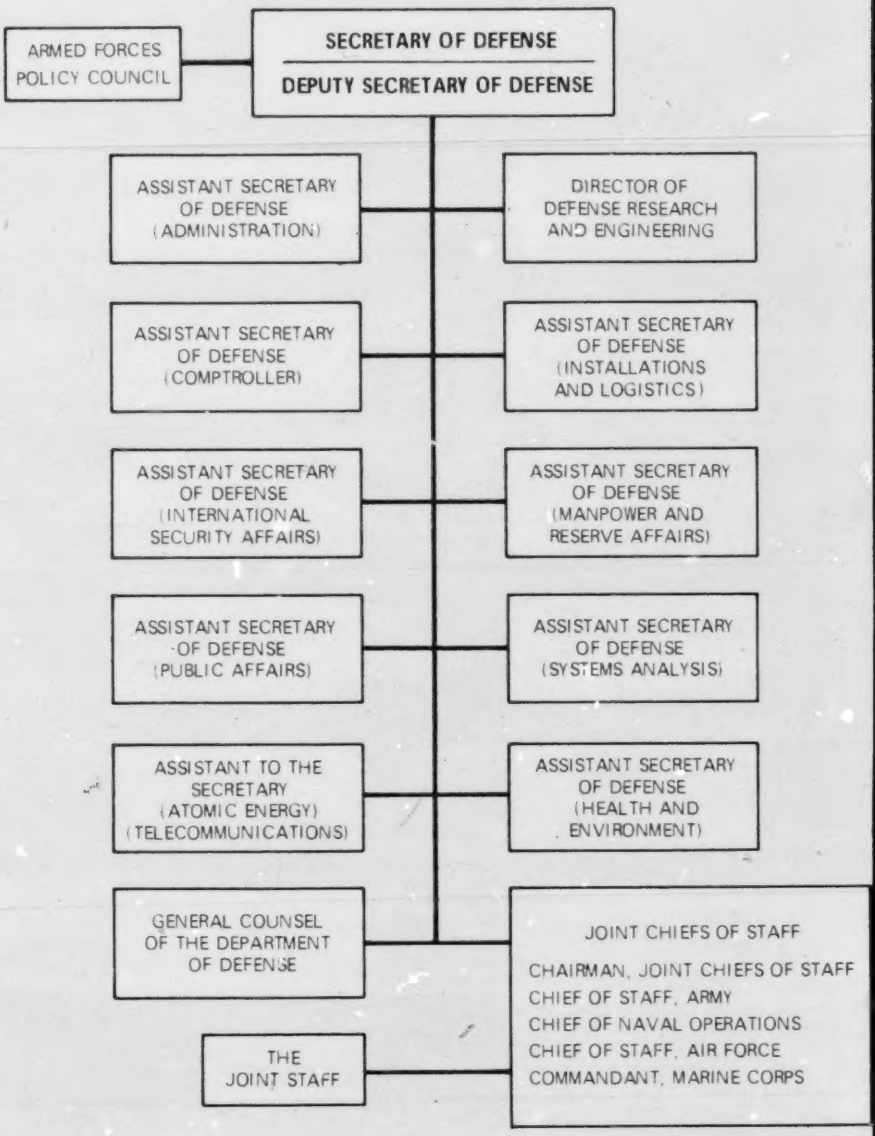
ARMED FORCES POLICY COUNCIL
SECRETARY OF DEFENSE
DEPUTY SECRETARY OF DEFENSE
ASSISTANT SECRETARY OF DEFENSE (ADMINISTRATION)
DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARY OF DEFENSE (COMPTROLLER)
ASSISTANT SECRETARY OF DEFENSE (INSTALLATIONS AND LOGISTICS)
ASSISTANT SECRETARY OF DEFENSE (INTERNATIONAL SECURITY AFFAIRS)
ASSISTANT SECRETARY OF DEFENSE (MANPOWER AND RESERVE AFFAIRS)
ASSISTANT SECRETARY OF DEFENSE (PUBLIC AFFAIRS)
ASSISTANT SECRETARY OF DEFENSE (SYSTEMS ANALYSIS)
ASSISTANT TO THE SECRETARY (ATOMIC ENERGY) (TELECOMMUNICATIONS)
ASSISTANT SECRETARY OF DEFENSE (HEALTH AND ENVIRONMENT)
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
JOINT CHIEFS OF STAFF
CHAIRMAN, JOINT CHIEFS OF STAFF
CHIEF OF STAFF, ARMY
CHIEF OF NAVAL OPERATIONS
CHIEF OF STAFF, AIR FORCE
COMMANDANT, MARINE CORPS
THE JOINT STAFF

Figure 42. Office of the Secretary of Defense.

Joint Chiefs of Staff

Prohibited by law from becoming an overall Armed Forces general staff, the Joint Chiefs of Staff are the principal military advisers to the President and the Secretary of Defense. In accordance with the law, they act as a separate organization representing the three military departments. The group consists of a Chairman, appointed by the President from one of the three Services; the Chief of Staff of the Army; the Chief of Naval Operations; and the Chief of Staff of the Air Force. The Commandant of the Marine Corps acts as a coequal member of the Joint Chiefs of Staff when matters pertaining to the Marine Corps are under consideration.

Either the Secretary of Defense or the Deputy Secretary of Defense issues directives and orders to the Joint Chiefs of Staff. Requests for action may be issued by any responsible official in the Office of the Secretary of Defense, but only if the authority has been specifically delegated to him by the Secretary. In short, the Joint Chiefs of Staff organization acts under the authority of the Secretary of Defense and in his name.

Tasks assigned to the Chairman of the Joint Chiefs of Staff are numerous. He provides the agenda for the JCS and furnishes the Secretary of Defense with periodic progress reports on important items being considered by the group. He keeps informed on all pending issues, and when agreement is reached, he forwards JCS recommendations, views, and advice to the Secretary of Defense. He also arranges for military advice to be given to units in the Office of the Secretary of Defense. The power to vote, which was granted to the Chairman by the Department of Defense Reorganization Act of 1958, is not so significant in itself, since this body ordinarily does not reach decisions through voting, but the legal right was intended to add to the prestige of the Chairman.

Among his many duties, the Chairman of the Joint Chiefs of Staff organizes the subordinate structure of the Joint Chiefs of Staff and the Joint Staff. He selects the Director of the Joint Staff after he has consulted with the other members of the Joint Chiefs of Staff and has secured the approval of the Secretary of Defense. The Chairman and the members of the Joint Chiefs prescribe the duties of the Joint Staff.

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Joint Staff

By law, the Joint Staff is limited to not more than 400 officers selected in approximately equal numbers from the Army, the Navy (including the Marine Corps), and the Air Force. It is organized into directorates (Fig. 43) concerned with personnel, operations, logistics, plans and policy, and communications-electronics. There are also several assisting agencies which are operationally and administratively responsible to the Operations Directorate of the Joint Staff.

The primary function of the Joint Staff is to prepare reports which serve as the basis for decisions by the Joint Chiefs of Staff.

Of the agencies assisting the Joint Staff, one that is particularly significant is the **National Military Command System (NMCS).** It was established to provide the President, the Secretary of Defense, and The Joint Chiefs of Staff with all the information they need to make their decisions and to provide the means to transmit these decisions to subordinate levels. This information pertains not only to military developments but also to those in the political, economic, social, and technical fields. The National Military Command System encompasses the National Military Command Center located in the Pentagon, the Alternate Military Command Center in Maryland, and the national emergency command posts—both airborne and afloat. All these command centers and posts are in operation 24 hours a day.

The National Military Command System also provides for effective coordination and liaison with other US Government agen-

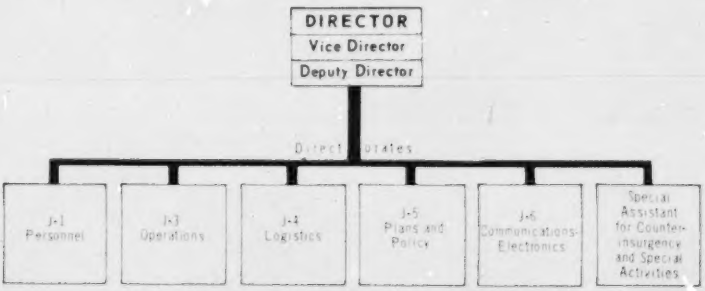

Figure 43. The Joint Staff.

cies or systems such as the White House Situation Room, the State Department, the Central Intelligence Agency, the National Security Agency, and the Office of Emergency Planning. Military information is provided to associated systems through the center, using direct, secure, and reliable methods of communications.

OPERATIONAL COMMAND STRUCTURE

In an age of supersonic jet aircraft and intercontinental missiles, it is necessary that command and control channels be clear and direct. High-level decisions concerning national defense may have to be made at any time and relayed instantly to US forces throughout the world. Because of this there are two separate command structures within the Department of Defense: one controlling the operational combatant commands and the other controlling the supporting commands.

As we noted earlier, the Reorganization Act of 1958 made the unified commands truly unified by placing all service elements in them under a single commander. These commanders, together with the commander of the specified command, receive their orders directly from the President through the Secretary of Defense and the Joint Chiefs of Staff (Fig. 44). This arrangement eliminates the possible delays which could result under the old system when operational orders were also relayed through the three Service Secretaries, the Chief of Staff for each of the military departments and, finally, to the unified and specified commanders.

Unified and Specified Commands

The unified and specified commands were discussed in Military Aerospace. They will be briefly reviewed at this point, however, because they are the operational forces controlled through the Department of Defense.

A **unified command** has a broad continuing mission. Organized under a single commander and composed of significant assigned components of two or more services, a unified command is established and designated by the President, through the Secretary of

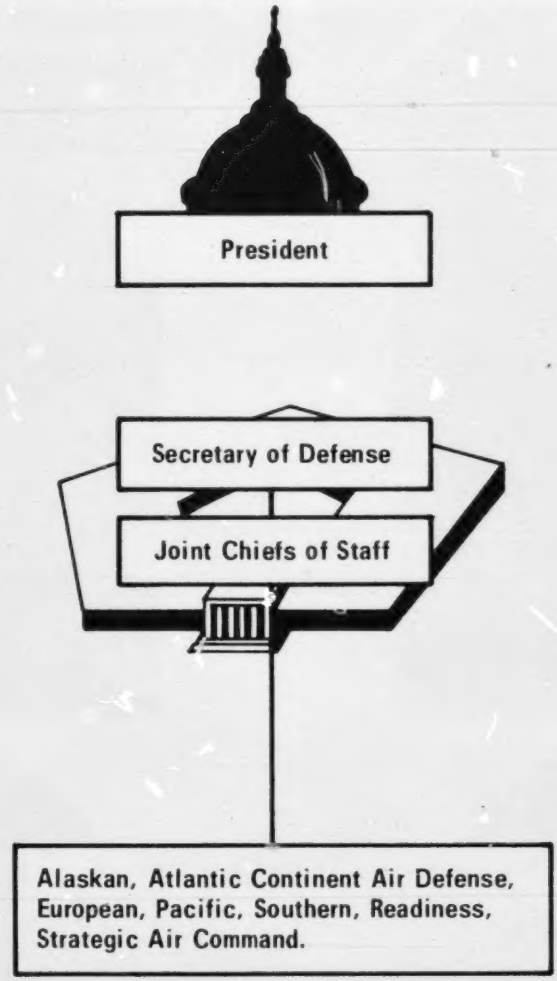
President
Secretary of Defense
Joint Chiefs of Staff
Alaskan, Atlantic Continent Air Defense, European, Pacific, Southern, Readiness, Strategic Air Command.

Figure 44. Operational chain of command.

Defense, with the advice and assistance of the Joint Chiefs of Staff.

A **specified command** also has a broad continuing mission and is established and designated by the President, through the Secretary of Defense, with the advice and assistance of the Joint Chiefs of Staff. a specified command is normally composed of forces from only one service. There is only one specified command, the Strategic Air Command.

At present, the unified commands are Alaskan Command, Atlantic Command, Continental Air Defense Command, European Command, Pacific Command, Southern Command, and Readiness Command.

Two of the US unified commands form part of combined commands; that is, commands which consist of forces of more than one nation. The Continental Air Defense Command is part of the North American Air Defense Command, which includes Canadian forces; the European Command contributes forces to the military structure of North Atlantic Treaty Organization (NATO). **Combined commands** operate similarly to the US unified commands, except that command control is much looser in the combined commands. The Army, Navy, and Air Force units from the member nations retain their identity in a combined command and much negotiation between the nations is necessary to make the command function successfully.

Support Command Structure

Although the Departments of the Army, Navy, and Air Force no longer have combat missions, they do retain important functions. The Service Secretaries, relieved of direct responsibilities for military operations, are better able to assist the Secretary of Defense in managing the vast administrative, training, and logistic functions of the Department. Except in operational matters, the Secretary of Defense issues orders to a military service only through its Secretary or his representative. The line of command for *support* of combat units runs from the President, through the Secretary of Defense, to the Secretaries of the military departments, and to the individual military departments.

Although the Service Secretaries are answerable to the Secre-

tary of Defense, they continue to be responsible for the economy and efficiency with which their departments operate. Each Secretary manages his share of the funds allocated to his service by Congress and makes an annual report on the work done by his Department.

FUNCTIONS OF THE MILITARY DEPARTMENTS

The Departments of the Army, the Navy and the Air Force share several common functions in support of the unified and specified commands. These are as follows:

1. Prepare forces and establish reserves of equipment and supplies for the effective prosecution of war, and plan for the expansion of peacetime components to meet the needs of war.

2. Maintain in readiness mobile reserve forces, properly organized, trained, and equipped for employment in emergency.

3. Provide adequate, timely, and reliable departmental intelligence for use within the Department of Defense.

4. Organize, train, and equip forces for assignment to unified or specified commands.

5. Prepare and submit to the Secretary of Defense budgets for their respective departments; justify before the Congress budget requests as approved by the Secretary of Defense; and administer the funds made available for maintaining, equipping, and training the forces of their respective departments, including those assigned to unified and specified commands.

6. Conduct research; develop tactics, techniques, and organization; and develop and procure weapons, equipment, and supplies essential to the fulfillment of the functions assigned.

7. Develop, garrison, supply, equip, and maintain bases and other installations, including lines of communication, and provide administrative and logistical support for all forces and bases.

8. Provide, as directed, such forces, military missions, and detachments for service in foreign countries as may be required to support the national interest of the United States.

9. Assist in training and equipping the military forces of foreign nations.

10. Assist each other in the accomplishment of their respective functions, including the provision of personnel, intelligence, training, facilities, equipment, supplies, and services.

The forces that each service develops and trains to perform its primary functions are to be employed to support the efforts of the other services in carrying out the primary functions of the specified and unified commands.

CIVIL DEFENSE

One further function of the Department of Defense is civil defense. From the time the program was initiated in 1948, responsibility for its implementation had been assigned to a succession of Government agencies, none of which were too successful with it. Finally, in 1961, civil defense functions were revamped and the responsibility for administering them given to the Secretary of Defense.

The Secretary was charged to develop and execute an effective warning and communications system and to assist State and local governments in establishing post attack community services. A special office, the Office of Civil Defense, was organized to implement the program. This office was subsequently placed under the Secretary of the Army since civil defense functions are handled principally by the Army.

WORDS, PHRASES AND NAMES TO REMEMBER

Aeronautics and Astronautics Coordinating Board
Armed Forces Policy Council
Central Intelligence Agency (CIA)
combined commands
Hoover Commission
Joint Chiefs of Staff (JCS)
Kitchen Cabinet
National Aeronautics and Space Council
National Military Command System (NMCS)
National Security Act of 1947
National Security Council
Office of Emergency Preparedness
Office of Management and Budget
Office of the Secretary of Defense
Reorganization Act of 1958
Reorganization Plan No. 6 of 1953
Secretary of Defense
specified command
unified command

REVIEW QUESTIONS

1. **What are the legal foundations for the Department of Defense? How is civilian control of the Military guaranteed in the Constitution?**
2. **What are the defense responsibilities of the President and Congress?**
3. **What are the four top-level defense agencies in the Executive office? Briefly explain the functions of each agency.**
4. **How did the National Security Act of 1947 change the US defense structure? Describe the organization of the National Military Establishment.**
5. **What important changes in the National Security Act were made by the 1949 Amendments? What were the significant features of the Reorganization Acts of 1953 and 1958?**
6. **Outline the responsibilities of the Secretary of Defense and identify the agencies in his department.**
7. **What is the role of the Joint Chiefs of Staff? Explain the functions of this organization.**
8. **List the unified and specified commands, explaining their organization and composition.**

THINGS TO DO

1. Find out what proportion of the national budget for the present fiscal year is appropriated for defense spending. If possible, determine how this money is allocated within the DOD. Report your findings to your class.
2. Copy the organization chart of the Defense Department and fill in the names of the persons now holding the positions shown.

SUGGESTIONS FOR FURTHER READING

POWERS, LT COL PATRICK W. *A Guide to National Defense. The Organization and Operations of the U.S. Military Establishment.* New York: Frederick A. Praeger, 1964.

Chapter 4

The Korean and Vietnam Wars

THIS CHAPTER presents a brief review of US involvement in the Korean and Vietnam Wars and the events which led up to them. First, the chapter discusses international developments between World War II and the invasion of South Korea by North Korea in 1950. Next, it describes the course of the Korean War, the buildup of US forces during the war, and the factors affecting US military policy after the war. Finally, the chapter describes the historical background of the Vietnam War, the reasons for US involvement, and some of the most recent innovations in weaponry and electronic devices used by US forces in Vietnam. When you have studied this chapter, you should be able to do the following: (1) list two significant actions by the Soviet Union that occurred prior to the Korean War; (2) explain why the United States could not make full use of its air power in Korea; (3) list three innovations or improvements in military hardware that were developed during the decade following the Korean War; (4) outline the basic causes of the Vietnam War and the reasons for US participation; (5) list three factors peculiar to Vietnam, that complicated US military operations; (6) name and describe three innovations in weaponry, electronics, and aircraft employed by US forces in Vietnam.

WHEN WORLD WAR II ended in 1945, the Allied powers (the United States, the USSR, Great Britain, and France) adopted a joint occupation policy for the conquered territories. Japan was put under the exclusive control of the United States, but each of the major powers had authority in a separate zone of Germany, and Korea was occupied by Soviet forces in the north and US forces in the south, the dividing line between the two forces being the 38th parallel. There was little agreement, however, between the USSR and the other Allied powers as to the political and economic organization of their respective zones. The

Soviets had seized the opportunity to communize the war-weakened nations of East Europe, including the eastern half of Germany. Their sphere of influence also was extended to North Korea. The United States countered the Soviet moves by a policy of containment designed to check any further expansion of communism, either in Europe and or in Asia. International relations now moved into a position based on alignment of anti-communism led by the United States against communism led by the USSR. Europe was divided by the iron curtain and Korea by the 38th parallel.

Coincidentally with their communization program in East Europe, the Soviets were encouraging the Communist movement in China. One step in this direction was to turn Manchuria, conveniently situated on the border of North Korea, over to the Chinese Communists. Relations between the Soviet Union and China were further solidified by a mutual assistance treaty negotiated after **Mao Tse-tung's** Communist party came to power in China.

The threat of Communist expansion in Asia was disturbing to the West, but a far more disturbing event had occurred the previous year when the Soviets, at least two years ahead of any estimated timetable, shocked the West by exploding an atomic bomb over Siberia. The US monopoly on nuclear weapons was destroyed in the blast.

The significance of the Soviet leap into the nuclear age was only too clear. If the Soviets could so quickly achieve the capability to produce nuclear weapons, it would be only a matter of time before other nations, perhaps equally unfriendly to the West, could do the same. With weapons capable of wiping out entire cities, a general war might reach such proportions that an entire nation could be destroyed. Defense planners realized that for the sake of national survival, every effort must be made to keep any future war limited, confined to a relatively small area, and waged with the minimum force necessary to attain objectives.

The limited war concept is not new, of course; compared to the range and intensity possible in a modern general war, all previous wars have been limited. The doctrine of limited war was applied for the first time in the nuclear age, however, when UN forces moved to halt Communist aggression in South Korea.

THE KOREAN WAR, 1950–1953

For a two-year period between 1948 and 1950, the Communist government of North Korea had been trying unsuccessfully to take over the Republic of South Korea by means of insurgency. Finally, in an abrupt change of tactics, an attack force of the Peoples Army of North Korea was sent across the 38th parallel to invade the South. The South Korean forces, poorly trained, undermanned, and undersupplied, were no match for the invaders. Within three days, the North Koreans had driven the defenders from Seoul, the capital, and then pushed south down the Korean peninsula.

Although the United States had extended its policy of containment to Asia following the Communist takeover in China, the area of defense did not include Taiwan and Korea. The Secretary of State, in defining the Asian defense line, however, added that, in case of attack, these two countries would be expected to defend themselves, if possible; but if they were unable to do so, their defense would become a responsibility of the United Nations. Accordingly, when the United States received word of the invasion and the inability of the South Koreans to repel it, the matter was brought before the UN Security Council which promptly demanded a withdrawal of the North Korean forces. The demand was, of course, ignored, and so, for the first time in its brief history, the United Nations reacted to aggression with a decision to use armed force.

The international group sent to assist South Korea consisted of ground, air, and naval forces from 20 UN member countries and 1 nonmember (Italy). As the major contributor, the United States was asked to assume leadership and form a unified command. This was established under **Gen Douglas MacArthur.**

At the beginning of the war, President Truman had little more than the Strategic Air Command with which to support American international policies and commitments. Because of this, he was forced to recall veterans who had already served during and immediately after World War II to accomplish the military buildup (Fig. 45). In a series of spectacular successes during the first few months of the war, UN forces were able to drive the North Korean troops back into their own territory and penetrate North

Korea all the way to the Manchurian border. These first victories gave rise to considerable optimism that peace could be restored quickly. However, Red China elected to intervene at this point, and the heavy counterattacks by Chinese forces dashed any hopes for an early end to hostilities. Thus began a costly and hard-fought war which continued until July 1953, when at last an armistice was reached. Although the armistice brought an end to the fighting, no final peace treaty has yet been signed. As of this writing, North Korea is still under Communist control, and a United Nations force remains along the 38th parallel in South Korea to maintain an uneasy peace.

Korean War Military Forces

By the end of the first year of the war, the US Army had more than tripled its strength, much of it coming from the Reserve and the National Guard. The systematic rotation of troops through

Figure 45. Tanks of the 25th Infantry Division.

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the combat replacement system kept the manpower fairly constant until the signing of the armistice.

There was a corresponding buildup of the Air Force bringing it to a total of 95 wings by the end of the war. As in the case of the Army, much of this increase was drawn from the civilian components, that is, the Air National Guard and the Organized Reserve.

The number of Navy personnel doubled during the conflict, and the number of ships in the active fleet rose to 1,100.

Korean War Military Technology

To avoid the risk of a general war, the Korean conflict was fought as a limited military operation, using most of the same types of weapons and tactics as those employed in World War II (Fig. 46). New or improved infantry weapons increased the firepower of the foot soldier, but the restricted battle area did not allow full exploitation of the weapons available.

The Air Force gained and maintained air superiority for the UN forces, thus reducing casualties and making ground operations possible with fewer troops (Fig. 47). The United States used jet-powered aircraft in combat for the first time in the Korean war; and, while helicopters had been in limited use in World War II, their first practical use occurred in Korea in 1951 when almost a thousand marines were lifted to the front lines and an equal number brought back to the rear. Because of the fear that the conflict might spread, US aircraft were not permitted to cross the Yalu River. Air power, therefore, could not be used to its fullest advantage in the Korean War.

MILITARY POLICY BETWEEN KOREA AND VIETNAM

The need for a well-defined US military policy was very great in the years after the end of the Korean war. The events which pointed up this need are discussed in some detail in the booklet Military Aerospace used in AE II. We might mention, however, by way of review, that these events included development of Soviet bomber and missile capabilities and some post-Korean crises

Figure 46. Artillery unit in Korea.

such as those in Lebanon (1958), Berlin (1961), and Cuba (1962).

Then, as today, the demands generated by worldwide US defense commitments required military capabilities to meet all types of armed aggression. US forces had to have the capability to deter war, or if deterrence should fail, to engage in war at any level of intensity, from guerrilla warfare to general war, involving the use of nonnuclear and nuclear weapons. Today the United States follows a two-point military policy:

1. Deterrence: Prevention of military action through strength and readiness, which induces fear of the consequences.

2. Flexibility: Maintaining a constant state of readiness in all types of military forces which can respond to military action with an appropriate amount of strength in a minimum amount of time.

Military Forces After 1953

Six times between 1775 and 1950 the United States entered into major armed conflict without being adequately prepared. In each instance the country built its military forces while absorbing some initial losses in the fighting which had already started. Technological developments after World War II in nuclear weapons, aircraft, and communications had created a situation in which instant total war was a real possibility—in the event of attack, the United States would no longer have its former margin of time to rebuild a depleted defense force.

Because of the world situation, especially following the end of the Korean war, and because US military and civilian leaders were aware that general war would have to be fought with the force in being at the outbreak of that war, total US troop strength was maintained at a considerably higher level after 1953.

Both Selective Service and voluntary service provided much of the replacement personnel in the Armed Forces after the Korean

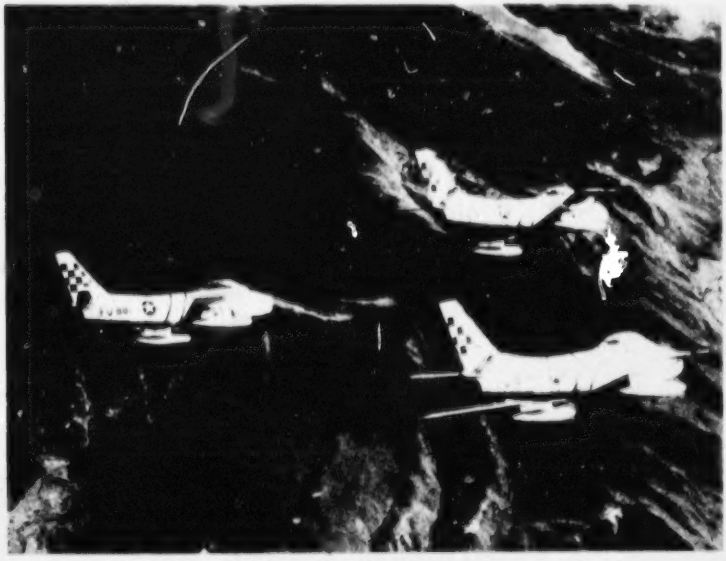

Figure 47. F-86s over Korea.

war. Nevertheless, during periods of international tension, Organized Reserve and National Guard units also served effectively with the Regulars and career Reservists.

Effects of Technology

We have noted that in the past the United States was inclined to be slow about adapting the products of technological development to military requirements in peacetime and to wait for wars to spur innovations in military equipment. From World War II on, however, a number of factors led the United States to keep its military requirements, hardware as well as personnel, under constant review and to introduce new weapon systems into the inventory as rapidly as they could be developed. One of these factors, of course, was the not-war not-peace world situation that existed between 1945 and the outbreak of the Korean War and again in the period after Korea which marked a growing US commitment in Vietnam. This situation made it necessary for the United States to be prepared for any contingency. Another factor was the exploration of space. Getting into space meant, among many other things, that the United States had to take steps to protect itself from possible aggression from this new environment. Moreover, the military profited from space research and development. Finally, the fighting in Vietnam brought with it demands for new and specialized equipment and weapon systems.

All of these factors manifested themselves in a number of ways. Even by 1961, science and technology had already made the difference between the F–86 and the F–105 aircraft, the B–36 and the B–52, the F–89 and the F–106, kilotons and megatons, and short-range missiles and intercontinental ballistic missiles. Even more startling was the development of supersonic aircraft by which man could travel, not only through the atmosphere but also through space.

Advances occurred also in the Navy and Army. For example, the Navy developed nuclear-powered submarines and aircraft carriers and new developments by the Army in helicopters and fixed-wing aircraft proved very significant in the Vietnam war.

The next decade was to bring even more innovations. Some of these are discussed in the section on Vietnam and others are covered in the following chapter.

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THE WAR IN VIETNAM

US involvement in Vietnam was a gradual process. No sinking of the *Main*, no Pearl Harbor, no massed invasion across the 38th parallel triggered this war. The conflict had its roots in the overall Communist program for expanding its sphere of influence in Southeast Asia by encouraging local Communist factions to seize control of their governments by means of political activity and insurgency.

Prior to 1950, Vietnam was a unified country under the protection of France. However, a determined group of Vietnamese Communists had formed a nationalist movement for the purpose of ousting the French and putting themselves in power. Led by **Ho Chi Minh** and aided by the Soviet Union and Red China, the Communists established a government in the North and claimed jurisdiction over all of Vietnam. From this stronghold, the North Vietnamese directed and supported the insurgency activities of their South Vietnamese comrades, called at that time the **Viet Minh** (now the **Viet Cong).**

The French forces had neither the air power nor the ground strength to control the nationalist movement; and because of their negative attitude toward granting Vietnam full independence, they received little support from the Vietnamese people. Finally, in 1954, the French agreed to a nine-nation conference to be held at Geneva. The participating nations included the United States, Great Britain, France, the Soviet Union, Communist China, and representatives from Laos, Cambodia, and both North and South Vietnam.

The conference resulted in what came to be known as the **Geneva Accords.** In general terms, as applied to Vietnam, the Accords directed a cease-fire based on a temporary line dividing Vietnam at the 17th parallel. All the territory north of the line was to be administered by the Viet Minh and that south of the line by the French. Citizens on both sides of the line were free to choose the territory in which they preferred to live. This situation was to remain for two years, at which time general elections would be held to reunite the country. Unfortunately, due to continued hostilities between North and South, the elections were never held. Thus, even though it was accidental, the Geneva Accords brought about the creation of two Vietnams.

In line with its policy of containment in Southeast Asia, the United States gave assistance to the French in their efforts to hold Vietnam against the Communists by sending a limited number of technical and administrative advisory teams. US participation continued at this low level for several years, but when the French forces finally withdrew in 1956, the South Vietnamese need for US aid became acute.

By 1958, the conflict had entered a new phase. The Viet Cong were now being openly reinforced by North Vietnam, and what had started as a local insurgency grew into full-scale war as the North Vietnam aggressions continued. Northern military forces infiltrated the South, and assassinations, sabotage, and attacks on local defense units, including US facilities, mounted.

As the Communist assaults intensified, the South Vietnam forces weakened until, by 1965, they could no longer put up an effectual defense. Without help, South Vietnam could not prevent a Communist takeover. When the United States decided, in March 1965, to send combat troops to South Vietnam, it did so at the request of that country's government and with the realization that this was the only way to stop the Communist drive and insure the right of the Vietnamese people to build a strong and free nation.

A New Kind of War

The nature of the war in Vietnam was unusual by any previous standards of military operations. In part this was due to the physical aspects of the country—poor roads, heavy jungle canopies which concealed enemy movements, and a hot humid climate in which supplies quickly deteriorated. Another complication was the fact the South Vietnamese and the Viet Cong were so alike in racial characteristics, speech, and dress that it was often impossible to distinguish between friend and foe, particularly where enemy forces had infiltrated supposedly friendly areas. With such an elusive enemy, there could be no clearly defined front lines; the enemy had to be fought when, where, and if he could be found (Fig. 48).

Remarkable features of this war were the technological advances in weaponry, electronic devices, and aircraft. These were tailored for the most part, to cope with the conditions peculiar

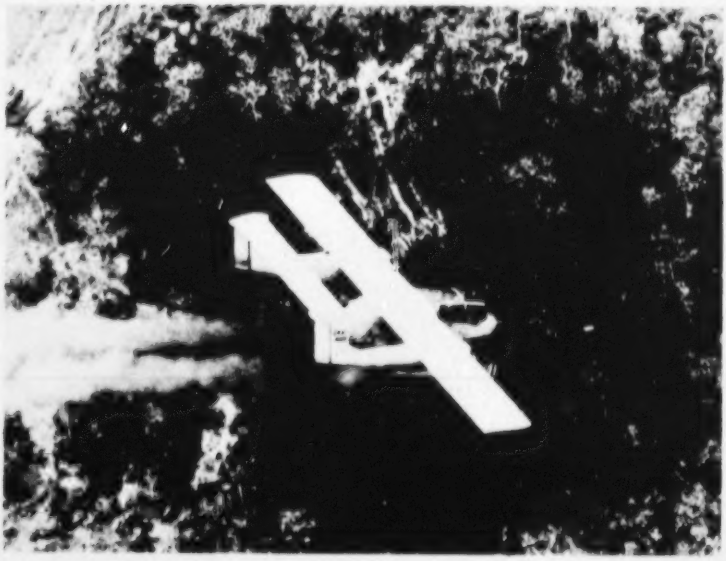

Figure 48. Forward air controller (FAC) marking enemy targets for bombers, Vietnam.

to Vietnam. There is not enough space in this chapter to discuss all the innovations engendered by the war in Vietnam, but a few of the more outstanding ones are mentioned.

Technological Innovations

In weaponry, one of the most recent developments, was the guided bomb. Guided bombs, thanks to their electronic guidance systems, could be aimed at a target a mile away and hit it with on-the-nose accuracy.

There were two basic guidance systems, laser beams and TV. **Laser-led bombs** usually involved the use of two aircraft (Fig. 49). One plane circled over the target directing a laser beam on it while the other plane dropped bombs equipped with infra-red sensors. As the bombs fell, their sensors homed in on the beam's reflection and guided the bombs directly to the target. A later type laser-led bomb was guided by the beam projected from its

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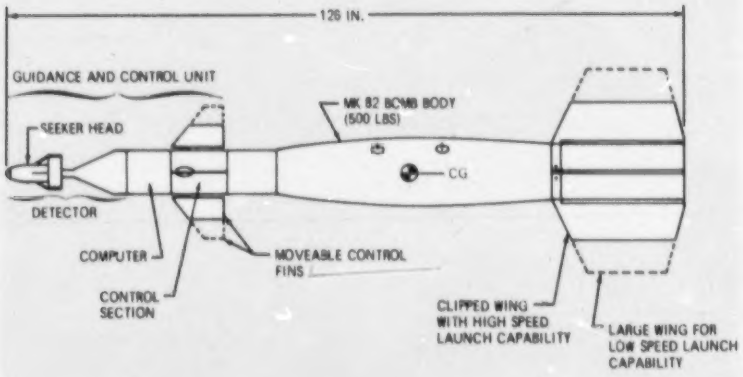

Reproduced by permision of 3246th Test Wing Armament Development and Test Center (AFSC) Eglin AFB, Florida

Figure 49. Laser-led bomb.

own plane. There were also heat-seeking bombs attracted by the engine heat of a truck or a tank.

The TV bomb, such as the **Walleye,** could be dropped from a stand-off altitude, a factor which safeguarded the bomber from most antiaircraft fire (Fig. 50). As the bomb fell, it was monitored by the pilot on a TV receiver. The pilot could adjust the bomb's course by remote control, or the bomb could guide itself using a picture of the target recorded in its electronic brain. The **Maverick,** another variety of TV bomb, was equipped with a rocket booster which allowed it to maneuver itself into caves to seek out military supplies hidden by the enemy.

In Vietnam, the guided bombs resulted in great savings to the United States in men, planes, fuel, and missiles. It was estimated that one guided bomb could destroy a target that would have required dozens of conventional unguided bombs. This meant that fewer planes were needed on a bombing mission and the danger from antiaircraft guns was greatly reduced because of the high altitude from which the bombs could be dropped. One further advantage, and a major one, was that the accuracy of the bombs eliminated much of the risk of accidentally hitting a nearby populated area instead of the target.

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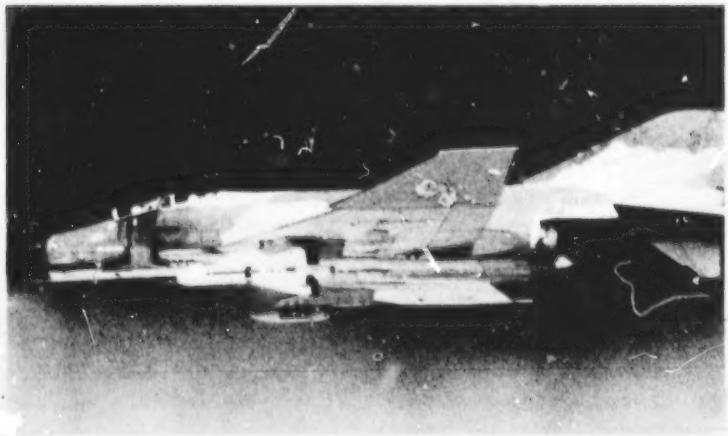

Figure 50. Walleye, the TV-guided bomb, headed for the target area on an F-4.

A unique development in aircraft was the gunship, an armored transport plane used to knock out enemy trucks on the Ho Chi Minh trail. Operating under the code name **Pave Spectre,** the gunship was a cargo plane equipped with rapid-firing 40mm cannons and sophisticated electronic devices for night flying. Additional fire power was supplied by 20 mm Vulcan cannons and 7.62 mm miniguns. Just one of these aerial dreadnaughts was reputed to have destroyed a 64-truck convoy in one hour of attack. A valuable feature of the gunship was its survivability. The cannons could operate at better than a 10,000-foot slant range allowing the gunship to fire effectively at a safe altitude.

The gunship concept was first developed in 1964 using the AC-47, affectionately known as **"Puff, the Magic Dragon."** Later, the Air Force converted some C-119 troop transports into gunships before finally concentrating on AC-130s (Fig. 51). The C-47s and C-119s were subsequently transferred to the South Vietnamese Air Force.

Another technological achievement was a type of sensor developed to smell or hear the enemy and transmit information s to his position and movements to a US Air Force base a safe 100 miles away. These electronic "bloodhounds" proved highly effective on the Ho Chi Minh trail in an Air Force operation known

as **Igloo White.** The most commonly used sensors were dart-shaped devices equipped with branched antennas. The sensors were planted in bunches parallel to a trail by being hurled from jet aircraft with such force that the dart ends dug themselves into the ground leaving nothing above the surface but the antennas which resembled weeds and blended with the surrounding undergrowth. The sensors were accompanied by acoustical devices which either rode in with them or were parachuted into the treetops. As the sensors became activated by the smell and sound of passing enemy troops and convoys, they beeped the information to radio-controlled planes which were kept circling over Laos or Thailand on a 24-hour basis. From the planes, the information was relayed to a base in Thailand for computer analysis. With the enemy location now pinpointed by the computer analysis, aircraft could then be directed to the target. From sensor to bomber, this complicated operation consumed a very brief period of time.

Helicopters were not a Vietnam-related innovation, having seen service in two previous wars; but it could be said that they came of age in Vietnam, doing multiple duty as troop transports, observation craft, medical evacuation planes, and weapon systems.

The employment of helicopters on a large scale in Vietnam

Figure 51. The AC–130 combines reconnaissance with strike capability. It carries four miniguns and four M–61 Vulcan 20 mm cannons.

was prompted by the need for greater mobility; and from this need, the airmobile concept was born. The concept became a reality in 1963 with the organization of the US Army 11th Air Assault Division, later reorganized as the 1st Cavalry Division.

The **airmobile** concept opened a new chapter in the conduct of land warfare by adding a third dimension. The battlefield now became a checkerboard on which troop units could be picked up by helicopters and quickly moved to any area where they were needed, from the wooded highlands to the swampy rice paddies of the Mekong Delta (Fig. 52).

The value of helicopters for aerial observation was well established before the Vietnam war and much of the airborne surveillance over Vietnam was performed by them. A new use for helicopters in Vietnam, however, was as gunships. Some models, such as the Huecobra, were armed with rockets, 7.62 mm miniguns, and machine guns. Thus armed, the helicopters provided fire support to ground troops. Although vulnerable to enemy ground fire while hovering over the target, the newer, turbine-

Figure 52. UH-1 helicopter returning from action in Vietnam.

powered helicopters were mobile enough to have a hit-and-run capability. This new breed of helicopters came to be known as the "flying cavalry."

In addition to transporting troops, helicopters were very valuable in evacuating battle casualties and rescuing downed pilots. The V/STOL (vertical and/or short takeoff and landing) capability of helicopters allowed them to get into and out of places that would have been inaccessible to fixed-wing aircraft or even trucks. In most cases of battlefield casualties, the wounded could be picked up and transported to a hospital within 30 minutes; and, as a result, the fatality rate among battle casualties dropped to less than 1 percent.

The usefulness of helicopters for medical evacuation was not limited to combat. In 1970, a new program, **Military Assistance to Safety and Traffic (MAST)** was given its first test to determine the feasibility of using military helicopters and paramedical service personnel in responding to civilian emergencies caused by illness or accident. Pilot projects were conducted for several months at five military installations in the United States, three at Army installations and two at Air Force bases. The program was the result of a joint effort initiated in 1969 by the Department of Defense, the Department of Health, Education, and Welfare, and the Department of Transportation to demonstrate, in civilian applications, the capabilities of those military resources and techniques which were being so effectively employed in combat. MAST was essentially an operational test in which military resources for air evacuation were meshed with local civilian medical emergency systems. At each site, the program was developed by the civilian community working with the military project officer; and the military resources were used only to supplement, not replace, local emergency facilities. The results of the tests were sufficiently successful, both from the military and the civilian standpoint, that further development and expansion of the program was recommended. The MAST program is an example of a paradox that has been evident throughout the history of man—the fact that many innovations developed to meet the requirements of war have remained to become peacetime blessings (Fig. 53).

Considering the technological innovations developed during the Vietnamese war—automated devices bordering on science fiction

Figure 53. The MAST program in action. Above, helicopter arriving at the scene of an accident as deputy sheriff holds back traffic and highway patrolmen attend the victim. Below, victim being carried to the helicopter for flight to hospital.

—it might appear that manpower would soon be replaced by machines in national defense. However, the most sophisticated devices are only as efficient as the personnel who operate them. Nevertheless, it is true that as technology advances, the traditional body-to-body battlefield confrontation is being replaced in some areas by what might be termed "long distance" war. The new devices, however, have not lessened the need for manpower in US defense —particularly manpower with specialized knowledge and training.

In the above discussion of innovations introduced in the Vietnam war, the emphasis has centered, for the most part, on Air Force operations. In the following chapter, we will look at the missions and current hardware of the US land and sea forces.

WORDS, PHRASES AND NAMES TO REMEMBER

airmobile
deterrence
flexibility
Geneva Accords
gunship
Ho Chi Minh
Igloo White
Laser-led bombs
MacArthur, Gen Douglas
Mao Tse-tung
Maverick
Military Assistance to Safety and Traffic (MAST)
Pave Spectre
Puff, the Magic Dragon
Viet Cong
Viet Minh
Walleye

REVIEW QUESTIONS

1. **List the events that resulted in the Korean War and explain US policy for containing the spread of communism in Asia.**
2. **Explain the role of US air power in Korea.**
3. **Define post-Korean US military policy.**
4. **Why did the United States discontinue its usual practice of demobilization after the Korean War? What technological factors affected US Military policy?**
5. **What internal problems in Vietnam were responsible for the War?**

6. **Explain the Geneva Accords, telling what decisions were made and what the outcome of these decisions was.**
7. **Outline the growth of US involvement in Vietnam.**
8. **What factors in Vietnam hampered US operations in the war?**
9. **List and describe three or more recent innovations employed by US forces in Vietnam.**

THINGS TO DO

1. Research the history of the United Nations and make a classroom report telling where and how it began, how it is organized, and how it operates.
2. Draw a map of North and South Korea indicating the 38th parallel, the Yalu river, and the major battle areas.
3. Start a scrapbook of clippings from magazines and newspapers of articles reporting new development in weaponry, electronic devices, or air, land, or sea transportation.
4. Find out the present status of the MAST program and report to your class. If there is a MAST project operating in your area, it might be possible for you to find out from people, civilian or military, who are working on the project how it is progressing.

SUGGESTIONS FOR FURTHER READING

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Chapter 5

Land and Sea Forces of the United States

THIS CHAPTER reviews the missions and capabilities of the US Army, Navy, and Marine forces and describes some of the more advanced equipment employed by each of these forces. First, the chapter looks at the role of the Army in US defense, both internationally and within the continental United States, and describes some of the weapons used in combat. Next, the chapter discusses the role of the Navy, giving particular attention to the recent advances in submarines, aircraft carriers, aircraft, and amphibious ships both in being in the Navy inventory or being planned for the near future. Finally, the chapter discusses the missions assigned to the various components of the Marine Corps and describes some of the equipment used in amphibious air-ground operations. When you have studied this chapter, you should be able to do the following: (1) list the fundamental tasks of US military forces; (2) outline the Army missions in cold, limited, or general war; (3) define basic army doctrine; (4) name and describe three Army weapons; (5) list the basic elements of the naval mission; (6) explain the advantage of Poseidon-equipped submarines; (7) discuss new equipment, in being or planned, in the Navy conventional forces; (8) explain the relationship of the Marine Corps to the Navy; (9) name the elements of the Operating Forces of the Marine Corps; (10) list the missions of the Fleet Marine Forces and (11) describe the capabilities of the AV-8A.

THE TRADITIONAL land and sea forces of the United States are the Army, the Navy, and the Marine Corps. Together with the Aerospace forces, they constitute the military power of the United States, serving as an instrument of national policy and directed by civilian authority.

To be of value as an instrument of national policy, military power must be effective, manageable, and appropriate in a wide spectrum of possible military involvement ranging from the lowest level, which would be a show of military presence to potential enemies, to the other extreme, which would be high intensity nuclear war.

The fundamental tasks of military forces as an instrument of national policy are:

(1) to deter military aggression or action counter to the interests of the United States.

(2) If aggression occurs, to be capable of exerting immediate and effective military pressure to resolve the conflict on terms favorable to the United States, its forces, and its allies.

(3) To assist in promoting a secure international environment.

(4) To safeguard the internal security of the United States.

The land, sea and aerospace forces of the United States are organized to exploit the unique capabilities of each service. They are prepared to function independently or in joint or combined operations, as the situation may require. The special capabilities of the land and sea forces are the subject of this chapter.

THE UNITED STATES ARMY

The Army was forged from the loosely knit militia and volunteer units of the colonies and was given official status as the Continental Army by the Second Continental Congress on 14 June 1775. The following day, Congress selected George Washington as Commander in Chief. The fundamental role of the Army, as the nation's land force, is to defeat enemy forces in land combat and to gain control of enemy land and people. This basic combat role provides the foundation for the role of the Army in both limited and general war, as well as in the noncombat situations of cold war.

The Army supports US national objectives by active contributions to national defense. These contributions include the maintenance of forward-deployed forces, mobile strategic reserves, and Army Reserve Components. The Army also employs highly trained and skilled personnel as members of military advisory groups and missions; and civic action teams. In addition, in the United States,

the Army gives support to the Civil Defense Program and actively participates in providing air defense for the nation.

The Army Role in National Defense

Army contributions to national defense are many and varied. Basically, the Army is prepared to operate in any of the three fundamental types of conflict—cold war, limited war, and general war.

COLD WAR.—Originally, the US military role in the cold war was limited to that of deterrence by physical presence. This role has been expanded to include military aid to allies. The aid includes a wide variety of military and civic actions, nation building, and armed forces development. The result of all this aid is stabilization of allied governments. Thus, this type of military effort is called **stability operations.**

Stability operations in countries friendly to the United States may be divided into four general categories: (1) internal defense operations, which include military, police, or security forces operations against armed insurgents; (2) internal defense assistance operations, which include advisory and training actions; (3) internal development operations, which are the strengthening of the local governments politically, economically, or socially; and (4) internal development assistance programs which are the training of local officials to guide their own country's development.

Stability programs must be tailored to the specific needs of the countries being assisted. There is, however, one consistent requirement: the United States will help those countries which seek to remain independent and are willing to work for their freedom.

The original Army cold war mission was deterrence by physical presence. In this role, which is still prevalent, the Army, even prior to Vietnam, had stationed over 40 percent of its active forces overseas. This is known as **forward strategy.** Together with US allies, Army units are positioned on the periphery of the Communist world and are supported by the power of the Navy and Air Force. The Army's strategic reserve, containing both active and reserve forces, gives support to the US position of deterrence. The Army National Guard and the Army Reserve are kept in a state of readiness and, when needed, are called to active duty.

In addition to its international cold war responsibilities, the Army also has three important missions at home. The Army must be prepared to protect and help the US civilian population.

One of the Army's most important home missions is carried out by the Army Air Defense Command. This command is on duty 24 hours a day to protect US population centers and industrial complexes. Providing combat-ready surface-to-air missile units, the Army Air Defense Command's primary goal is to help deter the enemy from making an aircraft attack on the United States.

Another extremely important mission on the home front is civil defense. The Army has primary responsibility for civil defense planning. The Army Reserve and National Guard, along with active units, are ready to conduct emergency civil defense support operations, not only in the event of a nuclear attack but also in natural disasters, such as floods or forest fires.

The third mission of the Army at home is assistance during civil disturbances. The Department of the Army has the primary responsibility among the military services for furnishing assistance to civil authorities during riots and demonstrations. The other military services have the responsibility to provide assistance if required.

LIMITED WAR.—The second level of conflict is limited war. At this level, the Army has to be able to conduct sustained operations; however, the degree of force used can be only as strong as suits the US national purpose. The Army is organized and prepared to use any degree of force up to and including the use of tactical nuclear weapons if necessary. Its operations must be conducted in such a way as to minimize the risk that the conflict will expand to total war. Since military objectives should always be subordinated to national objectives, the military operations in limited war are conducted within the limits established by national policy.

Limited war is conventional or mid-intensity warfare, involving a capability to fight successfully for limited objectives. These objectives are developed under definitive policy limitations. The policy limitations cover the extent of the destructive power that can be employed and the extent of the geographical areas that might be involved.

GENERAL WAR.—High intensity warfare, involving application of

the most modern military technology in maneuvering, firepower, intelligence and command, is called **general war.** The role of the Army in general war is to stop an enemy from taking key strategic areas during and after nuclear attacks. After securing the key areas the Army would undertake military operations to establish control over hostile populations.

The Army's deterrent role in cold war would, in general war, become one of attempting to limit damage in the continental United States and other strategic areas through its air defense system. The Army would also play a principal role in civil defense and recuperation after attack. In general war, belligerents would employ their total resources. Strategic, as well as tactical, nuclear weapons would be used. This type of conflict would result in unprecedented loss of life and destruction.

Army Organization

The principal weapon system to accomplish the Army mission is the combat division. The division consists of a relatively fixed organizational structure to which are assigned combat battalions in types and numbers appropriate to the division's mission and the anticipated operational environment. There are approximately 16,500 men in a division which is comparable to an Air Force Air Division. The commander of an Army division is normally a major general.

The principal elements of a division are:

1. A division headquarters—command, control, and supervision of division operations.
2. A military police company—internal security.
3. An aviation unit—mobility for command and control, reconnaissance, fire support, and logistics.
4. A cavalry squadron—reconnaissance and security.
5. An engineer battalion—construction and destruction tasks.
6. A signal company—communications, electronics, and photography.
7. A support command—supply, maintenance, medical service, and administrative services.
8. An air defense artillery battalion—low altitude air defense in the division forward area.
9. Field artillery battalions—fire support.

10. Three brigade headquarters—tactical control headquarters for task force elements of the division which include varying numbers of various types of battalions (Fig. 54).

These 10 elements are the base for all divisions. In addition to these, there are different types and numbers of combat battalions in each division. Each of these battalions has about 900 men and is the basic Army tactical unit. The determination of how many and what kind of battalions will go into a division is called **tailoring**. Forming these combat battalions prior to deploying the division to a particular area of operations is **strategic tailoring.** These battalions may be airmobile, airborne, infantry, mechanized infantry or armored.

The Army's missions are numerous and varied. All divisions can perform ground operations of nuclear or nonnuclear warfare, including counterguerrilla operations. The Army must be prepared

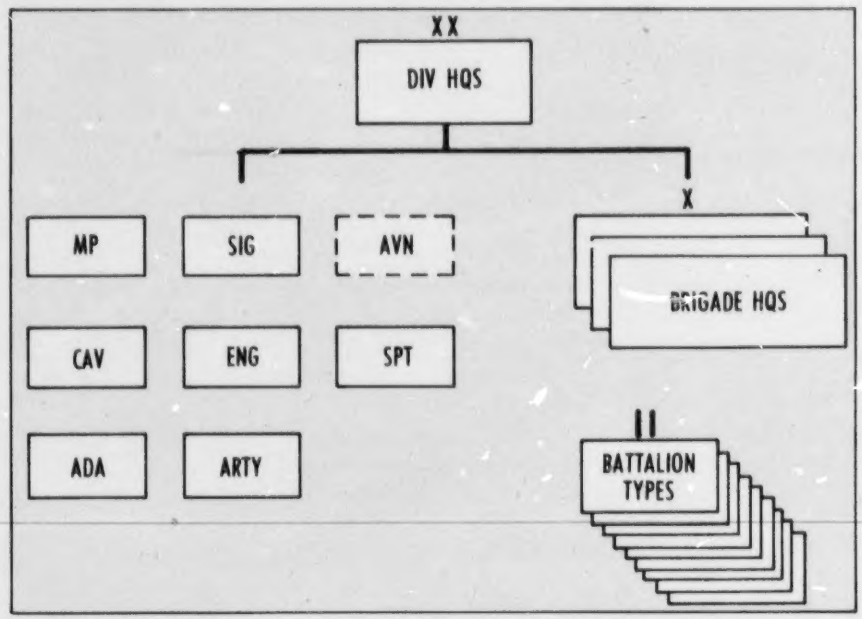

Figure 54. The Army Division.

to meet these and more demands, including its domestic programs, quickly and efficiently.

Weapons of the US Army

A discussion of the total weaponry employed by the US Army would be far too lengthy to be covered in this chapter. This section will confine itself to a few of the more significant weapons now in the Army inventory.

THE M–16 RIFLE.—The basic weapon of the Army is the **M-16A1 rifle.** This weapon is also used by the Republic of Vietnam and a similar version is used by the Air Force (Fig. 55). This gas-operated rifle fires semiautomatically or automatically from a 20- or 30-round magazine. The magazine is removable. The 55-grain bullet of the 5.56mm round has a muzzle velocity of 3,270 feet per second. The appearance and ballistics of this rifle's cartridges resemble those of the popular .222 Remington Magnum. The rear sight is also used as a carrying handle. The sights are so simple to adjust that it can be done with a cartridge. Fully loaded, but without bayonet or the bipod stand, the M-16A1 weighs about 7.6 pounds. Its maximum effective range is 460 meters or approximately 1500 feet. The maximum rates of fire are 20 to 40 rounds per minute semiautomatic, 40 to 60 rounds per minute automatic fire.

THE M–79 GRENADE LAUNCHER.—The **M–79 grenade launcher** which fires a high explosive projectile to a range of 400 meters (approximately 1300 feet), gives the infantryman a light, compact, easily handled weapon that can quickly cover the area between the longest range of a hand grenade and the shortest range of a mortar (Fig. 56). It looks like a short shotgun, is hinged to break open for loading and unloading, weighs 6.75 pounds, and is 29 inches long. The 14-inch aluminum barrel is rifled to stabilize the 6-ounce projectile. The combat round is the M406 40mm explosive cartridge which has a bursting radius of 5 feet.

THE TOW ANTITANK WEAPON.—**TOW,** standing for tube-launched optically-tracked, wire-guided missile, is a heavy antitank/assault weapon (Fig. 57). It combines a lethal warhead with high accuracy at both close and long ranges and has a high degree of tactical flexibility. Although portable for quick ground emplacement, it may also be fired from unarmored vehicles, armored

Figure 55. Air Force version of M–16 rifle equipped with a special scope for night operations.

personnel carriers, or helicopters. The TOW is easy to operate. The gunner obtains a telescopic sight picture of the target, then launches the missile. Wings and control surfaces remain folded while the missile is in the container and snap open upon ejection. As the missile goes to the target, it unreels two fine wires that carry electronic signals to control direction. The gunner, by tracking the

target on his scope, commands the missile automatically to follow his line of sight. In firing the missile, two separate solid propellant rocket motors are used. One motor ejects the missile from the launcher tube. After the missile coasts for a short time, the other rocket motor is fired to propel the missile to the target. Adapted to helicopters, the TOW can be fired while the helicopter is hovering or flying at maximum speed. The helicopter can also perform evasive maneuvers during the missile's flight.

THE M–551 SHERIDAN/SHILLELAGH.—The **M–551** armored reconnaissance airborne assault vehicle, a lightweight vehicle, can be transported and dropped by air. The Sheridan has a 152mm gun/launcher that fires conventional rounds or Shillelagh missiles and is capable of penetrating any known enemy armor (Fig. 58). The vehicle has a top speed of 45 mph, a range of 350 miles, and is capable of climbing a 50-percent grade. Powered by a 300 hp diesel engine, the **Sheridan** weighs 33,500 pounds loaded for combat. It is 20 feet long, 9 feet wide, and 10 feet high. Its secondary armament consists of a caliber .50 machine gun. The Sheridan carries a crew of four and is capable of operating at

Figure 56. M–79 grenade launcher.

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Figure 57. TOW missile system being fired from a ground emplacement on a lightweight launcher mounted on a tripod.

Figure 58. M–551 Sheridan/Shillelagh, the Army's armored reconnaissance vehicle.

night and under conditions of low visibility. Other features include aluminum armor, a smoke grenade launcher, rotating driver's hatch, multipurpose conventional ammunition rounds with armor-destroying properties that are also effective against troops and fortifications, and a combustible cartridge case and primer that eliminate handling empty shell cases in a limited space. The vehicle's versatility makes it particularly adaptable for use in counterinsurgency operations. The **Shillelagh** is a lightweight, surface-to-surface guided missile system for armored vehicles. A direct fire missile which is launched from a combination gun-launcher, the Shillelagh is effective against tanks, troops, and field fortifications. The missile is guided to its target by an infrared command guidance system mounted on the launching vehicle and can maneuver in flight to attack a moving target.

PERSHING 1A.—The **Pershing 1A,** the Army's most powerful land combat missile, is deployed with US troops both at home and in Europe (Fig. 59). With a selective range of up to 400 miles, the missile is powered by a two-stage, solid propellant rocket motor and is guided by an inertial guidance system. The Pershing 1A is loaded on a semitrailer and hauled by a tractor type vehicle.

A programmer-test station provides the means for rapid missile checkout and countdown. It is equipped with computer control devices and can automatically self-test and isolate malfunctions. Modern electronic packaging, featuring plug-in micromodules, allows the operator to make repairs at the firing site.

REDEYE.—**Redeye** is the smallest guided missile system; and because it can be carried by a man and fired from the shoulder, it gives the soldier an effective defense against low-flying aircraft (Fig. 60). The missile contains an infrared sensing device that guides on the heat of an aircraft's engine. The light launching tube is also a carrying case and can be transported through brush and over terrain where no other air defense weapon can go. Redeye weighs about 28 pounds and is about 4 feet long.

THE UNITED STATES NAVY

The basic naval mission is broken down into four primary elements. These elements are basic functions and are necessary

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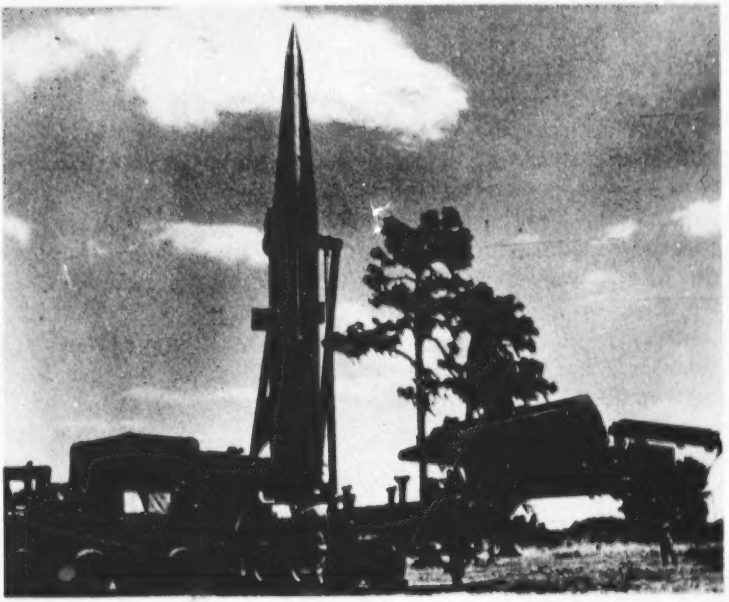

Figure 59. Pershing 1A missile system.

for the Navy to maintain effective control of the seas in the future. The four elements are:

1. Naval Strategic Warfare Forces. The Navy's deterrent capability is built around the **Naval Strategic Warfare Forces.** These forces maintain the nuclear standoff capability or the ability to launch thermonuclear weapons from outside enemy territory.

2. Sea Control Forces. The responsibility for preserving free high seas has historically been the Navy's primary mission. It is now just one of the four elements in the expanded Navy mission and **Sea Control Forces** carry out this element. It is their responsibility to insure that the ocean lifelines of the free world maritime nations are always open. Although, if necessary, all naval ships and equipment may be involved in this element, the forces tasked with this responsibility place a premium on adequate ocean surveillance and the ability to respond to crises with great mobility and speed.

3. Naval Projection Forces. The Navy responsibility for en-

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forcing national policy abroad is given to the **Naval Projection Forces.** Where armed conflict is necessary, naval and Marine forces must be capable of reaching from the sea to perform military tasks.

Cold War Deterrence Forces. Much of the deterrence by physical force is carried out by the overseas presence of the ships and men of the Navy. These naval forces need not be visible, but they must always be ready for action. The ability of the Navy to accomplish this without being obtrusive or making a lot of military noise gives it a unique capability for stabilizing military and political situations in cold war situations.

Navy Organization

The US Navy emerged from World War II with a two-ocean war experience and with the ships to maintain its two-ocean ca-

Figure 60. Infantryman fires a Redeye guided missile.

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pability. For particular area political stability and for times of overt conflict since World War II, the Seventh Fleet was positioned in the Western Pacific and the Sixth Fleet in the Mediterranean. Both of these fleets have been supported by fleets on the East and West coasts of the United States.

The Navy of today can be roughly divided into two broad types according to physical equipment. One type is for nuclear warfare and the other is for more conventional warfare at sea, such as the Navy's role in Vietnam.

NUCLEAR EQUIPMENT.—The Navy's capability for the strategic mission in case of general war is built around the Polaris-Poseidon system of nuclear-powered fleet ballistic missile submarines (Fig. 61). In 1973 this force consisted of 41 submarines. Of these, 10 were equipped with the older submarine-launched ballistic missile (SLBM) **Polaris.** The other 31 submarines were being outfitted with the Poseidon SLBM which is more sophisticated than Polaris. The **Poseidon** has the advantage of multiple independently targeted reentry vehicles, which means that one of these missiles can attack several different targets.

The Navy considers this nuclear capability at sea so important that it is proceeding with research into more sophisticated follow-on systems to Polaris-Poseidon. One of these systems is an undersea launched missile system **(ULMS)** which employs a long-range missile of true ICBM range. The Polaris-Poseidon missiles have only a 2500-nautical-mile range, which limits the submarine's launch distance from potential targets. ULMS, with its increased range, will permit a major increase in the operating area available to the submarine.

CONVENTIONAL EQUIPMENT.—The Navy's conventional forces include aircraft carriers, amphibious forces, attack submarine forces, seagoing support forces, and the shore establishment. Due to severe budget cuts in recent years, the Navy has followed the policy presented by a Secretary of the Navy, John H. Chafee, who said, "We have put the procurement of new ships, weapons and systems ahead of the maintenance of larger forces at sea right now."

Among the conventional forces of the Navy, the aircraft carrier is the most powerful and flexible component of the surface fleet (Fig. 62). The Navy modernization plan includes adding three new nuclear carriers to the existing forces. These will be **Enterprise** size (3½ times the goal-to-goal distance of a football field)

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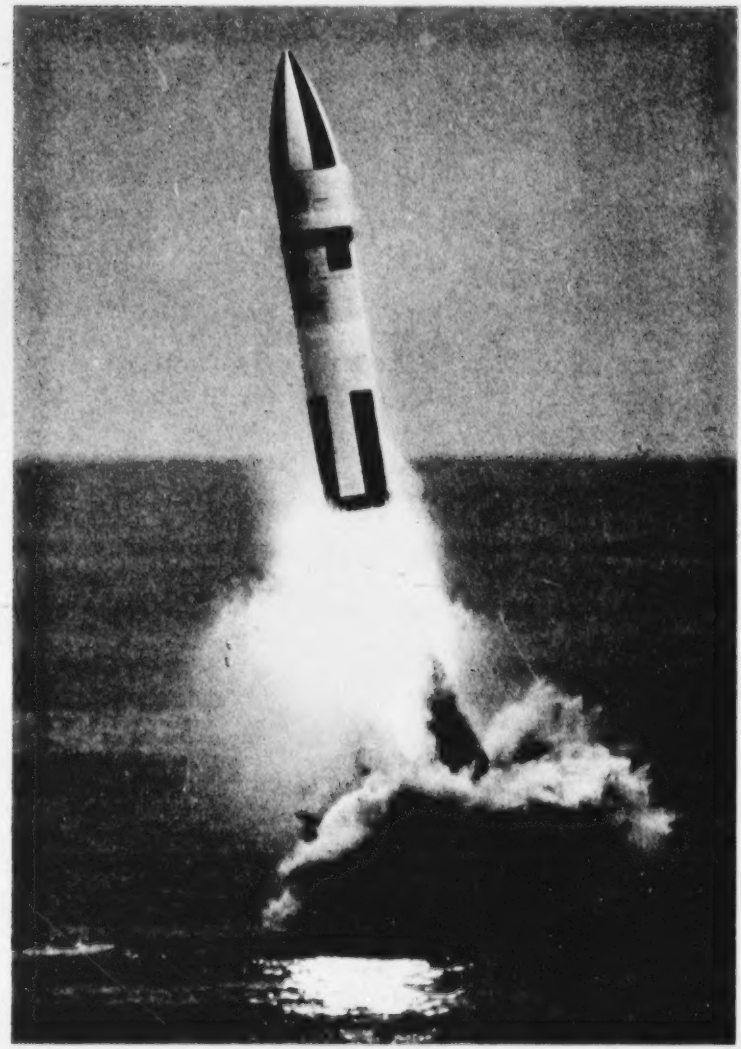

Figure 61. An underwater firing of Polaris A–3 missile by submarine.

Figure 62. The nuclear-powered attack aircraft carrier, USS Enterprise.

but will have an added weapon capacity to increase the carrier capabilities for either the projection or sea control tasks (Fig. 63).

The effectiveness of surface ships is being increased by putting various types of aircraft on as many ships as possible. This begins with destroyers which would operate manned helicopters. The Navy already has many amphibious ships with relatively large landing decks that could take helicopters and short-takeoff aircraft and is investigating new designs for helicopter and V/STOL operations.

In addition, the idea of combining the functions of existing attack and antisubmarine carriers is being studied. In this idea, one aircraft carrier would have a mix of tactical and antisubmarine warfare (ASW) planes aboard rather than having the two types each operate from its own specialized carrier.

As for the aircraft themselves, there are new designs now flying that will fit into the changed Navy. One is the **F–14** fighter/interceptor to replace the F–4 Phantom jet (Fig. 64). Another is the **S–3,** an advanced antisubmarine aircraft for carrier operations.

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In the area of aircraft for ships, other than the carriers, the plan is to employ helicopters of special design for antisubmarine missions, for mine countermeasures, and for defense against antiship missiles.

Short takeoff or vertical takeoff airplanes, such as the British Harrier and its future American counterparts, may also be important in the more-planes-on-more-ships concept.

In the amphibious forces, new ships will launch Marines to the beach in landing craft and also by helicopter. The flight deck of some models is large enough to accommodate helicopter gunships and short and vertical takeoff aircraft for limited ground support and interdiction sorties.

The new, 20-knot **LST** will put heavy equipment and supplies ashore several times faster and more efficiently than its World

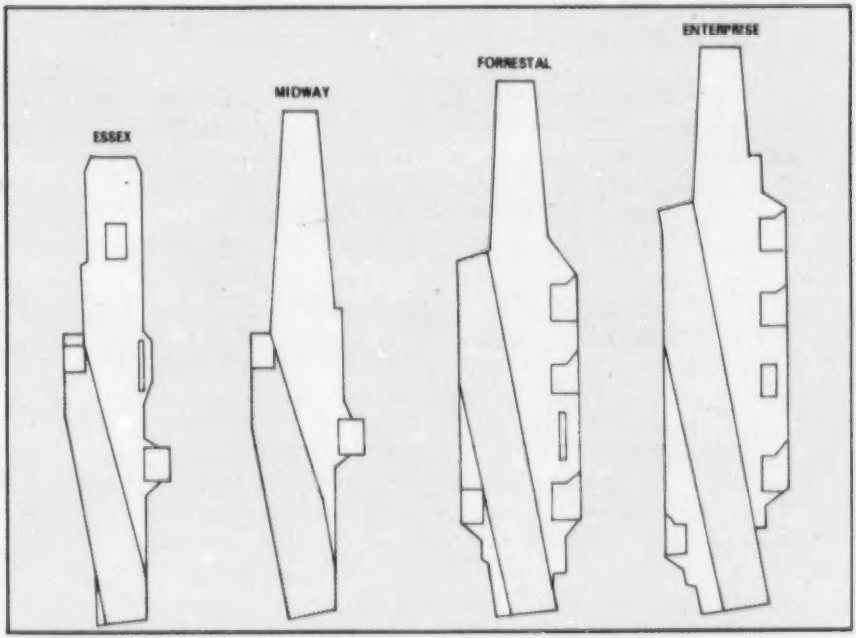

Figure 63. Comparison by size of US Navy aircraft carriers.

Figure 64. Navy fighter aircraft F-14.

War II grandmother. Also, the new **LCC's***, amphibious command ships, the first designed solely for this purpose in 25 years, are streamlining command techniques in amphibious operations (Fig. 65).

Sealift and ocean transport are two important jobs of the Navy. Ninety percent of all logistic support for the Navy, and for the Army and Air Force as well, has to be transported in the hulls of ships. For support of overseas operations, the Navy relies heavily upon the capabilities of the **Military Sealift Command** and the ships of the merchant fleet. The backbone of the naval surface fleet will remain, for some time, the guided missile cruisers. The last 8-inch gun cruiser was phased out in 1972.

It has become apparent that the submarine itself is one of the best weapons against other submarines. The Navy's urgent goal is to attain an all-nuclear-propelled attack submarine force as rapidly as resources will permit.

An advanced attack submarine is under construction. For more power and speed, it will have a modified surface ship atomic reactor. It will run faster and more quietly than present submarines and will be armed with the submarine rocket **(SUBROC)** as well as sophisticated torpedoes.

The Navy's operations have a great impact on the natural environment. Programs have been initiated to reduce the Navy's

*In Navy abbreviations the letter L denotes amphibious craft.

contribution to environmental pollution. Much progress has already been made to reduce physical clutter from ships, aircraft, naval shipyards, and industrial complexes. Research in this area has a high Navy priority.

Technology for the Future

Because so much of the means to accomplish the naval task of the 70s and 80s hinges upon the new and the unprecedented, research and development in all fields of naval technology is receiving extensive support. Just a few of the ideas being examined are the work with hydrofoil craft (Fig. 66), the refinement of nuclear power sources and adaptations, and more comprehensive research into the area of the effects of the water surface on ships. These ideas may result in ships such as Hovercraft, capable of speeds in excess of 100 knots (Fig. 67). Laser technology will receive increasing attention in communications and weapons design, and there will be continued development of fast vertical-and-short-takeoff aircraft.

Figure 65. LCC–19. Amphibious command ship USS Blue Ridge.

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Figure 66. Hydrofoil, one of the Navy's newer concepts.

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Figure 67. The Hovercraft skims the surface on a cushion of air.

THE UNITED STATES MARINE CORPS

The US Marine Corps has been a significant part of national defense since its founding in 1775. Although the Marine Corps is traditionally associated with the fleet, it is not a part of the United States Navy. As provided in national defense organization legislation, the Marine Corps is a separate military service within the Department of the Navy. Frequently, the Marine Corps, at the direction of the President, is assigned missions which are unrelated to naval operations. Examples of such missions were the use of Marines in Korea and South Vietnam (Fig. 68).

Essentially, the Marine Corps is an amphibious air-ground team which is able to maintain a state of instant readiness. This ability stems from the Marine Corps' close affiliation with the strategic and tactical flexibility and mobility of the naval fleet.

Marine Corps Organization

There are four major elements of the Marine Corps: (1) Headquarters, US Marine Corps; (2) the Supporting Establishment; (3) the Marine Corps Reserve; and (4) the Operating Forces.

HEADQUARTERS, US MARINE CORPS.—Headquarters, US Marine

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Corps consists of the Commandant of the Marine Corps and those staff agencies that advise and assist the Commandant in the discharge of his responsibilities.

SUPPORTING ESTABLISHMENT.—The Marine Corps Supporting Establishment trains, maintains, and supports the operating forces. The Supporting Establishment includes the Marine Corps schools, recruit depots, supply installations, certain Marine Corps bases, barracks and air stations, and a number of miscellaneous small activities.

MARINE CORPS RESERVE.—The mission of the Marine Corps Reserve is to provide a trained force of qualified officers and enlisted personnel to be available for active duty in the US Marine Corps in time of war or national emergency and such other times as the national security may require. The Reserve is called on when there is need for Marine Corps forces in excess of those provided by the regular establishment. It serves during and after the period needed for procuring and training additional units, and it provides qualified individuals in case of mobilization.

THE OPERATING FORCES.—The Operating Forces consist of (1) the Fleet Marine Forces, (2) the Marine complements aboard naval vessels, (3) the security forces at shore activities of the Naval establishment, and (4) US Marine Corps combat forces not otherwise assigned.

Figure 68. Marines in action in Vietnam.

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The remainder of this section will discuss the Operating Forces of the Marine Corps, of which the major part is the Fleet Marine Forces.

Fleet Marine Forces

A **Fleet Marine Force** is made up of land, air, and service elements of the US Marine Corps. There are two Fleet Marine Forces: Fleet Marine Force, Pacific and Fleet Marine Force, Atlantic.

The specific missions assigned the Fleet Marine Forces are to serve with the fleet in the seizure or defense of advanced naval bases and to engage in land operations that are necessary for the accomplishment of the naval mission. The tactics involved in this task are primarily built around amphibious operations and the Fleet Forces are directed to develop the tactics, techniques, and equipment necessary to accomplish the mission.

The concept of an air-ground team is seen throughout the Marine Corps organization. In peacetime, as well as in wartime, Marine divisions and Marine aircraft wings (MAWS) are located together. Each Fleet Marine Force consists of one or more Marine divisions, one or more air wings, and force troops.

Depending on the type of aircraft assigned, a squadron will have from 12 to 24 aircraft. MAWS are not organized according to types of aircraft, like most Air Force Wings, but they include a variety of fighter, attack, reconnaissance, transport, and rotary wing aircraft and light antiaircraft missile units. If an aircraft can fly from a carrier, then the crews flying these aircraft are trained in carrier operations.

Force Troops are special type combat support and combat service support units which can be employed to reinforce the Marine division/air wing team. Typical units in Force Troops are regiments or companies of amphibian tractors, engineers, tanks, motor transport, artillery, air-naval gunfire liaison communications, reconnaissance, and medical, surgical, and dental companies. Many of these units were deployed to Vietnam to increase the combat capability of the Marine Amphibious Force and to provide service support for the sustained operations ashore.

Fleet Marine Forces are composed of smaller task forces depending on the job they are to do. The task forces are: (1) Marine

Expeditionary Units, (2) Marine Expeditionary Brigades and (3) Marine Expeditionary Forces.

The **Marine Expeditionary Unit** (MEU) is normally commanded by a colonel. It is capable of performing combat missions of relatively limited scope and duration. It is the smallest of the three types of Marine air-ground task forces.

The **Marine Expeditionary Brigade** (MEB) is normally commanded by a brigadier general. It is capable of conducting sustained air-ground operations. However, the majority of situations in which sustained combat is anticipated will eventually require a larger Marine air-ground task force. Accordingly, the MEB is normally organized to accomplish a limited mission. Upon accomplishment of the mission, the MEB is usually absorbed by a Marine Expeditionary Force.

The **Marine Expeditionary Force (MEF)** is normally commanded by a major general. It is the type of Marine air-ground task force appropriate to the majority of situations involving Marines in sustained combat.

Other Operating Forces of the Marine Corps

Operating Forces of the Marine Corps not included in the Fleet Marine Forces are briefly described as follows.

FORCES AFLOAT.—Battleships (when in commission), cruisers, large aircraft carriers, together with certain amphibious ships (such as command ships), have detachments of Marines. These detachments are distinct entities in the complements of the ships and have the following missions:

1. To provide a unit organized and trained for operations ashore, either as part of the ship's landing force or as an independent force for limited operations.
2. To provide guncrews as required.
3. To provide internal security for the ship.

SECURITY FORCES.—Marine security forces provide internal security for all major shore stations in the Naval establishment which cannot adequately or appropriately be secured by civilian guards. The security forces are distinct components of naval activities where they are stationed and are assigned to the station. The security detachments also form a cadre from which Fleet Marine Forces may obtain trained personnel.

In addition to security forces furnished to naval installations, there are 86 detachments that guard State Department embassies, legations, and consulates in 74 foreign countries.

Advanced Equipment

Advanced equipment being acquired by the Marine Corps includes the **LVTP-7s,** which are amphibious vehicles, and a revolutionary VSTOL aircraft, the **AV-8A** (the US designation for the British-made Harrier) (Fig. 69).

In tests conducted by the Marine Corps in March 1972, the AV-8A exceeded expectations—in some areas, by as much as 150 percent. The tests proved that the AV-8A had a sustained sortie rate of over 6 per day which could be upped to 10 per day if needed in a combat situation. Furthermore, the air-

Figure 69. AV-8A STOL aircraft taking off from the flight deck of an amphibious assault ship.

craft can make a vertical lift off carrying a 3,000-lb bomb load, deliver the load to a target 50 miles away, and return. The vertical take-off capability of the AV-8A allows the use of much shorter carrier decks than is required by other fixed-wing aircraft and it can be used on a variety of unimproved landing facilities.

WORDS, PHRASES AND NAMES TO REMEMBER

AV-8A
cold war
Cold War Deterrence Forces
Enterprise
F-14
Fleet Marine Force
Forces Afloat
forward strategy
general war
LCC
LST
LVTP-7
limited war
M-16A1 rifle
M-79 grenade launcher
M-551
Marine Expeditionary Brigade (MEB)
Marine Expeditionary Unit (MEU)
Marine Expeditionary Force (MEF)
Military Sealift Command
Naval Projection Forces
Naval Strategic Warfare Forces
Pershing 1A
Polaris
Poseidon
Redeye
S-3
Sea Control Forces
Sheridan
Shillelagh
Stability operations
strategic tailoring
SUBROC
tailoring
TOW
ULMS

REVIEW QUESTIONS

1. **What are the basic tasks of the US Armed Forces?**
2. **Define cold war, limited war, and general war.**
3. **Outline the Army's functions in stability operations.**
4. **What are the responsibilities of the Army in limited war? In general war?**
5. **Name and describe at least three weapons employed by the Army.**
6. **List the basic elements of the Navy mission.**
7. **On what two systems is the Navy's nuclear fleet based? What advantage is provided by the newer system? Describe the capabilities of the ULMs.**
8. **Outline the capabilities of recent or projected additions to the Navy's carrier, amphibious and submarine forces.**
9. **Explain the relationship of the Marine Corps to the Navy.**
10. **What are the four Major elements of the Marine Corps?**
11. **Explain briefly the organization and functions of the Fleet Marine Forces.**
12. **What is the AV–8A and what are its capabilities?**

THINGS TO DO

1. Visit a nearby active or reserve Army, Navy, or Marine unit and interview a member. Find the individual's rank, duty and the position and job of his unit in the overall military structure.
2. Make a report to the class on additional weapons of the Army, Navy and Marines. Attempt to find what new weapons are in development for all three services.
3. Invite a member from each of the services to sit on a panel to discuss life, jobs, and opportunities in his branch of the service.
4. The Coast Guard is not covered in this text. Do research on the Coast Guard's place in the defense picture and report to the class why you think it was omitted.

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